The Orchadian

Volume 14, Number 1 www.anos.org.au September 2002

Official Journal of the Australasian Native Orchid Society

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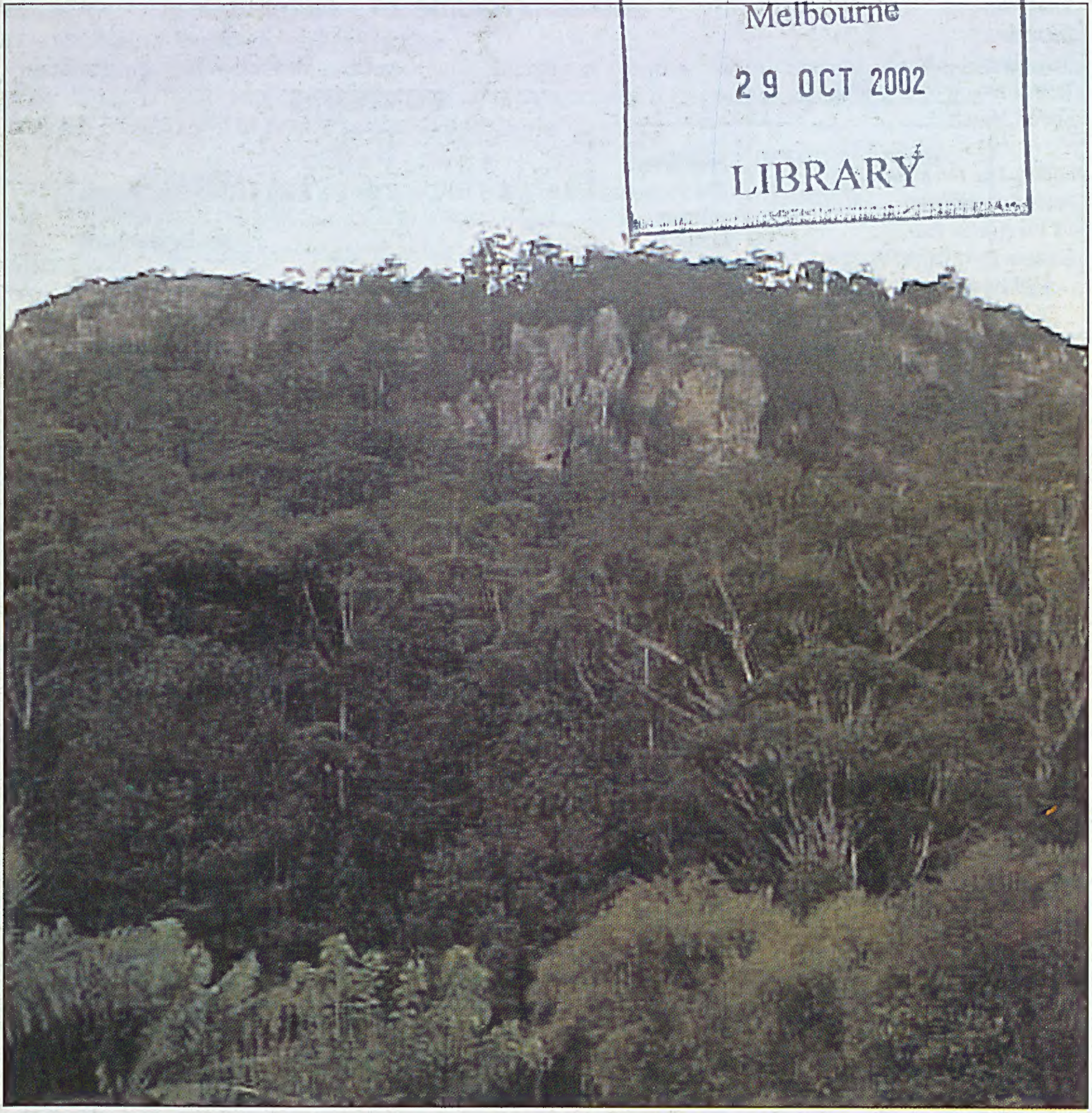

Alum Mountain, Bulahdelah.

Alum Mountain has been towering and watching over the area where *Rhizanthella slateri* was first discovered and has faithfully been watching the many orchid enthusiasts that have traversed its slopes looking for this elusive orchid and the many other orchids that are unique to this area and to the orchid world.

September 2002

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The Orchadian

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Victorian members caging *Pterostylis despectans* and monitoring orchids ... Back Cover

Australasian Native Orchid Society Inc.

Special General Meeting

Following the recommendation from the Advisory Council, the Society is calling a Special General Meeting to take place in conjunction with the regular monthly meeting of the ANOS Inc. Illawarra Group at Legacy House, Market St, Wollongong NSW, Tuesday 12th November, 2002 at 7.30pm. The meeting will consider and vote on the recommended changes to the Society's Rules as listed below.

Proposed Amendments to Rules.

(1.)
Clause 4. MEMBERSHIP
(7). Register of Members.
The Secretary shall establish and maintain a Register of Members of the Society specifying the name and address of each member together with the date on which the person became a member.
AMEND " Secretary" to read "Membership Registrar"

(2.)
Clause 9. **COUNCIL.**
(2). Membership of Council
(b).
ADD
"(vi). The Membership Registrar."
"(vii). The Website Controller."

(3.)
DELETE Clause 24. **COMMON SEAL.**

(4.)
RENUMBER Clauses 25. TO 30., inclusive to read "24. TO 29.", inclusive.

The effect of Amendments (1.) and (2.) will be to add two Office Bearers to Council with specified duties and to shift some workload from the Secretary. In regard to Amendments (3.) and (4.), under the Associations Incorporation Act, we no longer require to hold a Common Seal, therefore Clause 24, is to be deleted and subsequent Clauses renumbered.

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Life Memberships to The Australasian Native Orchid Society Inc.

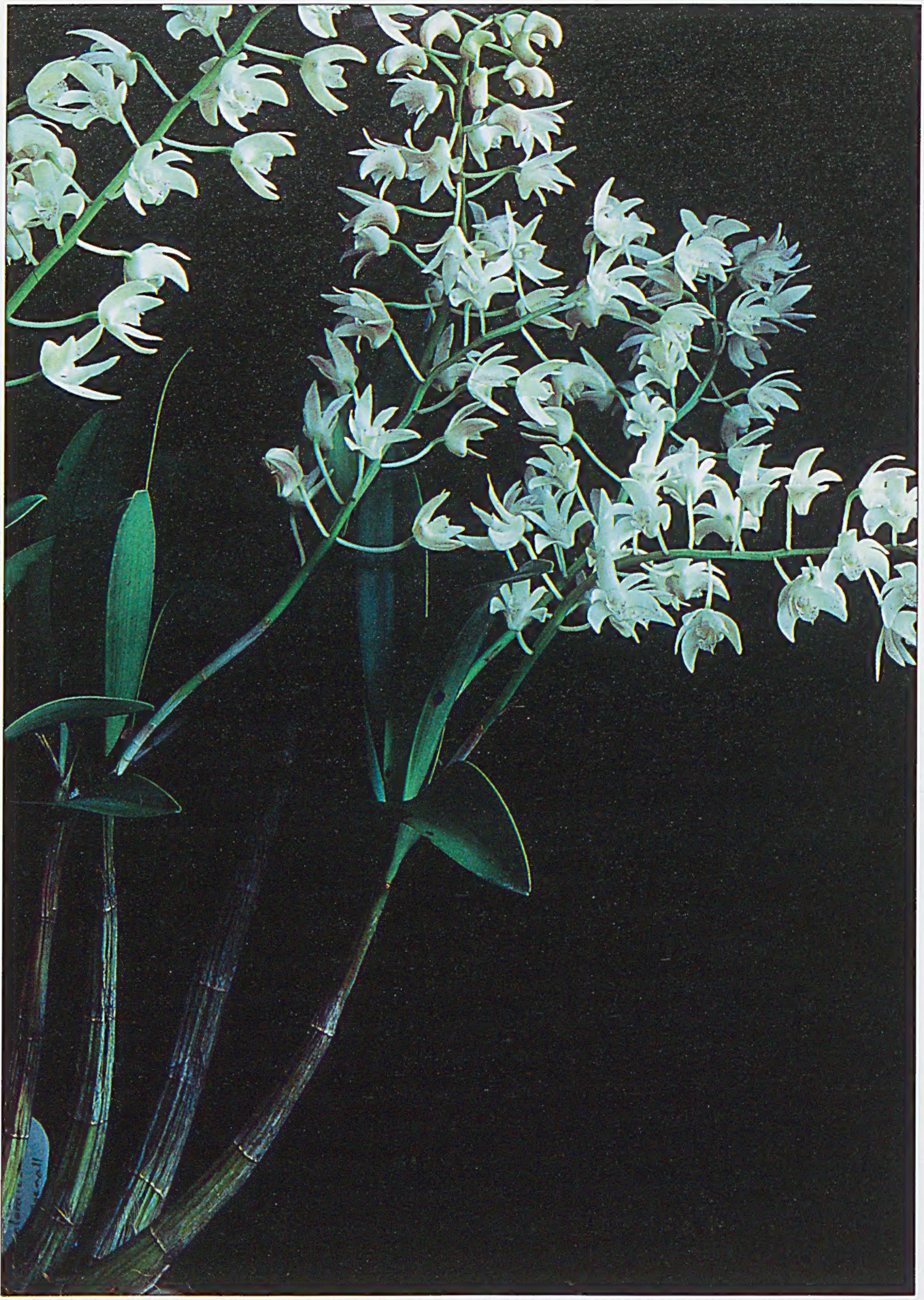
In the past months Life Memberships have been awarded to three of our colleagues. David Banks, Ruth Rudkin and George Hillman.

David and Ruth have, over the many years of their orchid lives, been great ambassadors to native orchid growing and to ANOS itself. They have both travelled the world and not only encouraged the world to grow Australian native orchids, but to also join our Group. They have both served many years on Council, working in executive positions.

George Hillman joined Council in 1982 and has been the quite achiever. He has done significant work in local conservation saving local endangered species and working with authorities to locate and protect these orchid species.

From all your colleagues and friends in the orchid world we wish you the best and thank you for all the time and effort you have put into a hobby we all share and appreciate.

Graham Slater
President ANOS Inc.



Dendrobium X *kestevenii* Photo Walter T. Upton
A piece of the original plant grown by Dr Kesteven, of Bulahdelah.

Editorial

Firstly, I think we should all thank David Banks for the wonderful effort he has put into *The Orchadian* over the past two volumes. David has set a standard we all enjoy reading and has made the journal a product worthy of keeping for both references and perusing purposes. David leaves *The Orchadian* at a time when we now see large changes in the names and taxonomy of our native orchids, evident in the past several issues of *The Orchadian.* I personally feel that these changes may take some time to filter through to many of the orchid growers. So, David we thank you and wish you the best. We also hope that you will continue to support *The Orchadian* with some of those wonderful articles.

Now a bit about myself and where I see *The Orchadian* going under my editorship. I have been editor for ANOS Warringah Group for 14 years and I always admired the bulletin from ANOS Victoria Group, with their photos and wonderful articles the members submit each month. I tried to do the same with Warringah bulletin but never to the standard of the Victorian bulletin. I was approaching our printer about doing a page in colour when out of the blue a new member offered to print the bulletin in colour, the whole bulletin. I then learnt very quickly to use colour photos and coloured text and enjoyed every minute of it, after thirteen years in plain black and white this was wonderful. The position for Editor of *The Orchadian* was of concern to ANOS Council for quite a while before I even gave it a thought. One or two of the councilors asked if I was interested and they asked again, and again. Finally, I submitted.

Conservation of our native orchids is my passion. To different people conservation can mean quite different things. At one end of the scale you have those that believe that collecting a plant from the wild and growing it will preserve the orchid, some will collect orchids and propagate from them, some will tell you that breeding hybrids will take pressure off the bush collected plants and others firmly believe that the only way to conserve our orchids is to preserve the habitat that they naturally grow in. I personally lean towards the latter of these, but I strongly believe that all these and other conservation ideas, have and will all contribute to both conserving and understanding our native orchids. I would like to see *The Orchadian* move more in this direction, having the Groups and members letting all know what is happening around the country with our orchids.

The Orchadian will not differ to much in appearance from the way David has presented it in the past Volume. Once the Volume is completed, Volume 14, I would like to have it put onto CD for use in the computer world. As most bulletins from the Groups are now produced on computer I feel the time will soon come when all editors will also be on the Internet and then be able to pass articles between each other electronically, rather than the cumbersome job of retyping the article. As they also learn to use pictures and when technology is such that colour is a reasonable cost, we should see some good bulletins. Many Groups are now starting to pass around or post their bulletin via the Internet. Indeed, many of our native orchid nurseries have web pages and catalogues available via the internet, which makes things quicker, and for those who can use computers, easier.

As we are all aware the taxonomy of our native orchids is currently going through a huge reclassification. ANOS Inc. and the ANOS Judging panel will officially, neither accept nor reject these changes. When articles are submitted for *The Orchadian* I will accept which ever names the author uses. I will not be changing or updating the names!

Finally, as many Editors have said in the past, "The Editors' job is to put the journal together not write it!" The success of *The Orchadian* comes from the members who support it, not those who criticize it! If botanical articles are all we receive then that's all we can put together. I mentioned earlier I favour conservation and I believe that this is the area where ANOS can come together, many authorities are asking our help in locating and studying our native orchids. There are many projects happening around the country that are both, of interest and of learning to other members. 48 pages is a lot to fill each time, so if there is something happening within your Group, your environment or workplace then think about putting pen to paper! (so to speak).

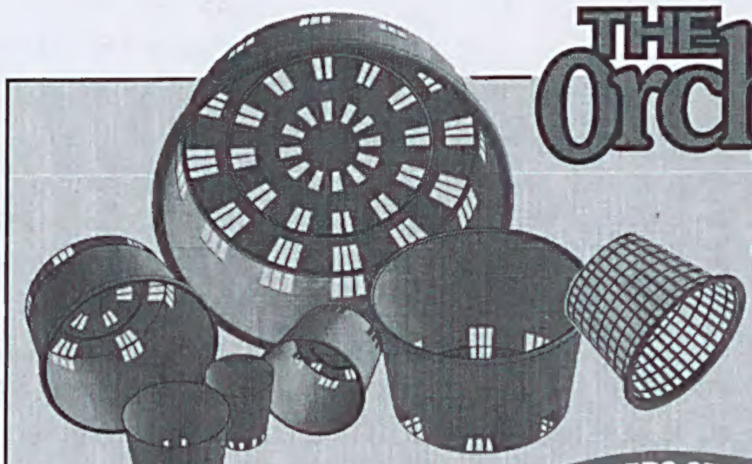
What the Groups are Doing! In this new section for *The Orchadian*, the Victorian Group has written about the activities their Group undertakes. I have asked the Victorian Group to do their report first as I feel that this Group is what all ANOS Groups should aspire too. This is a section I will in turn ask each Group to do, with around 25 Groups it should take 2 Volumes to go through.

Rhizanthella slateri, originally described from Bulahdelah as *Cryptanthemis slateri*, by Rev Rupp, is currently under threat, the RTA intend building the new highway through the area where this orchid was first found and is the type site for this species. This area, under the watchful eye of Alum Mountain, has long been a haven for orchid enthusiasts to visit and is of historical importance to orchidists. I have put together some articles which I hope will be of interest.

All articles for the December Issue, Volume 14 Number 2, should be with the Editor by November 10.

I take on this position with enthusiasm and hope for the support of Australian native orchid enthusiasts from around the world.

Peter Eygelshoven
peygelshoven@optusnet.com.au



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What The Groups Are Doing!

A.N.O.S. Victorian Group Inc.

Helene Wild
(Editor of the *Victorian Group Bulletin* and Life Member)
56 Civic Parade, Seaholme 3018. E-mail: amwild@eisa.net.au

If you are like us and your life revolves around native orchids, you will want to belong to a dynamic orchid society that specialises in the plants we regard so highly. Alex and I have never regretted joining A.N.O.S. Victorian Group, and would recommend anyone involved with native orchids, whether as a hobbyist or a professional, to seriously consider joining us.

With a membership currently hovering between 400 and 450, our Society is one of the largest native orchid groups in the country. We like to think the popularity of the Victorian Group reflects our interesting and well-run meetings, the willingness of members to share information, and the wide range of activities that are organised each month. No matter where your particular interest lies, there is sure to be a sub-group that will cater to your needs. If you are a glutton for punishment, you can attend a native orchid related activity almost every weekend of the year.

Once a month, the Epiphyte Study Group meet at a different member's home to look at Australasian epiphytic orchids, discuss their cultivation, and share their knowledge with other members of the Society. At one of these meetings, the group will inspect their host's plants, and they may study a particular species, its distribution and habitat, and its requirements in cultivation. On other occasions, members may focus on one particular type of hybrid, orchid mixes, fertilisers, or the flasking and deflasking of Australasian epiphytic orchids. Every once-in-a-while, the group will travel to see epiphytic orchids growing in their natural habitats. Reports on the Epiphyte Study Group's activities are published in the *Bulletin*, and in this way our understanding of Australasian epiphytic orchids is shared with other enthusiasts worldwide.

Monthly field trips are organised by the Terrestrial Study Group who, over many years, has travelled the length and breadth of Victoria (and interstate) looking at ground orchids *in situ*. There are some wonderful writers amongst members of this group, and their field trip reports make excellent reading. These reports, which usually include charts of flowering times and locations, are published regularly in our monthly newsletter. Through this group's activities, we are gradually accumulating a picture of "what flowers when and where". While on field trips, we study terrestrial orchids in their natural habitats and discuss *ex situ* growing techniques. It is admirable that the "growing members" of the Terrestrial Study Group share their knowledge freely and, through their combined efforts, we are gradually working out cultivation techniques, potting media and watering regimes for a wide range of different (and often specialised) species.

Members of the Terrestrial Seed Group, which is an off-shoot (no pun intended) of the Terrestrial Study Group, are developing skills and successfully raising terrestrial orchids from seed. Monthly meetings are held at the home of Dick Thomson where use is made of a laminar flow cabinet on loan from the Australian Orchid Foundation. The work this sub-group is doing is raising our level of understanding about the flasking and deflasking of terrestrial orchid seed and the replating of protocorms. Group members are studying the importance of mycorrhizal fungi associated with orchids, and their experiments also include the raising, isolation and use of some species of fungi known to have associations with native orchids.

The Tuber Bank provides a wonderful service by making terrestrial orchid tubers available to financial members of A.N.O.S. Victorian Group. Terrestrial orchid growers are encouraged to donate their excess tubers to the Society; then our Tuber Bank Co-ordinators distribute them amongst other growers. A nominal fee covers the cost of postage and packaging. The Tuber

Bank has been operating continuously for over ten years and currently offers in excess of 130 species and varieties.

From its inception, A.N.O.S. Victorian Group has been conservation conscious. We were one of the first groups to appoint a Conservation Officer, and the work Lorraine Marshall did on our behalf enhanced our Society's reputation Australia-wide. Lorraine stepped down from this position in November 2000, when Andrew Dilley accepted the conservation challenge. Andrew has built on the solid work done by Lorraine and, under his enthusiastic leadership, the Conservation Group has skyrocketed to become one of the most active groups within our Society. Not only are we involved in the war to save significant orchid sites, we are also looking after several endangered species, including *Prasophyllum suaveolens* in the western Goldfields, *Pterostylis despectans* in the Maryborough area and *Pterostylis cucullata* on the Mornington Peninsula. A.N.O.S. Victorian Group is working with Melbourne Zoo, NRE and university personnel as part of a co-ordinated approach to orchid conservation. Some of our members belong to threatened orchid recovery teams, and are growing orchids for reintroduction into their former habitats.

Our new members are, arguably, the most important members of our Society, because our club's future rests in their hands. The New Members Group co-ordinator smoothes a new member's entry into the Society, and organises monthly shadehouse visits to view more experienced growers collections. Visits are arranged to epiphyte and terrestrial collections and, on occasions, the New Members Group is combined with an Epiphyte Study Group or Terrestrial Study Group meeting, thus encouraging the newcomer to participate in other activities.

Our social activities are many and varied. For example, during 2001, we held an Annual Dinner, two four-day Melbourne Cup Weekend Field Trips (one "mainly epiphytes" and the other "mainly terrestrials") and an end-of-year barbeque dinner. The Society stages its annual Spring Show in peak flowering season (usually the last weekend in September), and participates in various other shows and displays. In past years, social activities have included progressive glasshouse visits, yum cha lunches and wine and cheese tastings.

Our large membership also reflects the excellence of the *Bulletin*, our 14-page monthly newsletter. We take great pride in our newsletter that informs members of monthly meetings, group activities and Society news. A comprehensive Last Meeting report is supplemented with a list of plants benched that month, and a typical issue contains a plant of the month, group reports and general interest articles written by Society members. Where appropriate, photographs (at this stage in black and white) accompany members' contributions. Although we wish we could meet them in person, our membership includes many who will never attend a meeting. The *Bulletin* is mailed to country, interstate and overseas members who tell us they joined our Society just to receive our newsletter.

Thanks to the Editor of *The Orchadian* who requested this essay, I'm sure many of you are now asking yourselves "How can I join this vibrant group"? Single or family membership is $24.00 per year within Australia ($34 per year for overseas members). Make your cheque payable to A.N.O.S. Victorian Group Inc. and mail it to our Membership Secretary at 97 Christmas Street, Northcote, Victoria 3070. Don't forget to include your name, address and telephone number.
You may wish to visit our Web Site:

http://www.anos.org.au/groups/victoria/index.html

Blank Greeting cards are available through Ivan Margitta, *Diuris fragrantissima* (photo page 12) is one of the cards available. All funds raised through this card is donated to ANOS Vic. Conservation. There are 18 different orchid cards available and can be purchased from Ivan at $2.50 per card plus postage. Send Orders to Ivan Margitta 10 Beddoe Ave, East Bentleigh, Victoria 3165.

(I thank Ivan for the use of his photo of *Diuris fragrantissima* to go with Helen Richard's article. Ed)

Members from ANOS Victorian Group counting orchids.

Photos by Andrew Dilley

Weeding Watsonia

Diuris fragrantissima - ITS CONSERVATION STORY SO FAR

Written and Presented by Helen Richards
P.O. Box 440, Yarra Glen Vic. 3775

Let's start by pretending we are pioneer settlers in this new land, and we have come to Port Phillip. Stretching to the north-west of Melbourne town are grasslands, and if you explore them in late spring you will find growing between the clumps of grass, these beautiful white to pale purple strongly-perfumed flowers in such numbers that we call them 'Snow in the Paddocks'. I guess they would have first been observed by Europeans about 150 years ago, but would have been known to aborigines for thousands of years and been in existence for millions of years. Well now, just 150 years on, there may or may not be any plants left in the wild.

Pre-european settlement, grasslands stretched across Victoria, covering about 10% of the state. They have now been reduced to 0.1%, being prime targets for agriculture, remnant portions occurring along roadsides, railway lines, cemeteries and some on private land. Now *Diuris fragrantissima* had quite a limited distribution, occurring on the Keilor plains between Sydenham (about 20km north-west of Melbourne) south to Werribee (about 30km south-west of Melbourne) where it grew in grasslands dominated by Kangaroo Grass on heavy basalt soils. What hope did it have, occurring so close to Melbourne in areas which were ideal for industry and urban development as well as agriculture. Nicholls observed, in 1934, that the species was becoming rare and Willis, in 1951, believed that it was in dire peril of extinction. By 1970, only five populations remained, all along railway lines and, because of poor land management, only one site remained by 1980, near Sunshine (hence its common name - the Sunshine Diuris). At that time about 100 plants remained, but in the ensuing years the population declined, with 67 flowering plants in 1982, eleven in 1989 and only one in 1992. None appeared for several years, then one in 1997. Shortly after that an arsonist set fire to the reserve and three plants subsequently flowered in 1998 and 2000.

Just briefly, its taxonomy. It was originally called the White Diuris (*Diuris alba*) but that was recognised as a species which occurs in N.S.W. and Queensland only. Dockrill described it as a variety of *Diuris punctata* in *the Victorian Naturalist* 81:137(1964), naming *it Diuris punctata* var. *albo-violaceae*, referring to the colour of the flowers. In 1989, in *Australian Orchid Research* Volume 1, The Catalogue of Australian Orchidaceae, Jones and Clements raised it to species status, naming it *Diuris fragrantissima* - an apt name because of its beautiful perfume. They noted that it differed from *D. punctata* in having a dwarf habit, stiff, erect flowers, white with purple markings and strong fragrance.

D. fragrantissima has the life cycle of a typical deciduous terrestrial, growing from a tuber which shoots in early autumn, has grass-like leaves, flowers in late spring and dries off in December. It propagates itself from seed, the plant making one replacement tuber only. It is pollinated by a small native bee through simple deception, the purplish colour of the flowers mimicking the native flowers with which it grows, and the bees may also be attracted by the strong fragrance of the flowers.

What has been done to conserve this species? In 1950, the Native Plants Preservation Society moved some plants and other native herbs into a reserve at Sydenham, but *D. fragrantissima* was only seen there for the following four to five years.

In the mid-1970's, Mark Clements went to work at the National Botanic Gardens, Canberra, where he commenced work on the symbiotic germination of orchid seed (germinating orchid seed using its mycorrhizal fungus), work pioneered by Dr Jack Warcup in S.A. He successfully grew *D. frangrantissima* from seed. We in A.N.O.S. Victorian Group became well involved with its cultivation through member Rick Datodi, a very enthusiastic and capable grower of terrestrial orchids who met Mark. Rick successfully grew on deflasked seedlings and also germinated seedlings around his parent plants. The tuber-removal process was also applied successfully to *D. fragrantissima.* When Rick could no longer grow his terrestrials because of change of family circumstances, he passed his collection on to me, which I grew and propagated successfully for many years until the dreaded virus affected all of my Diuris plants and they had to be destroyed.

Sometime around the early 1980s, the young Cam Beardsell had just finished his studies at LaTrobe University where he had been involved in the rare and endangered plants program for which the university had received a grant. He went to Canberra to see Mark's work in *D. fragrantissima*. Mark gave him a flask of seedlings which Cam brought straight back to Melbourne, and very excitedly planted them straight out into a reserve at Laverton North which appeared to be a suitable habitat. It was mid-summer and Cam went back frequently to water his precious seedlings, but they quickly died. (No surprise these days.) However, that was the first attempt to plant seedlings back into the wild.

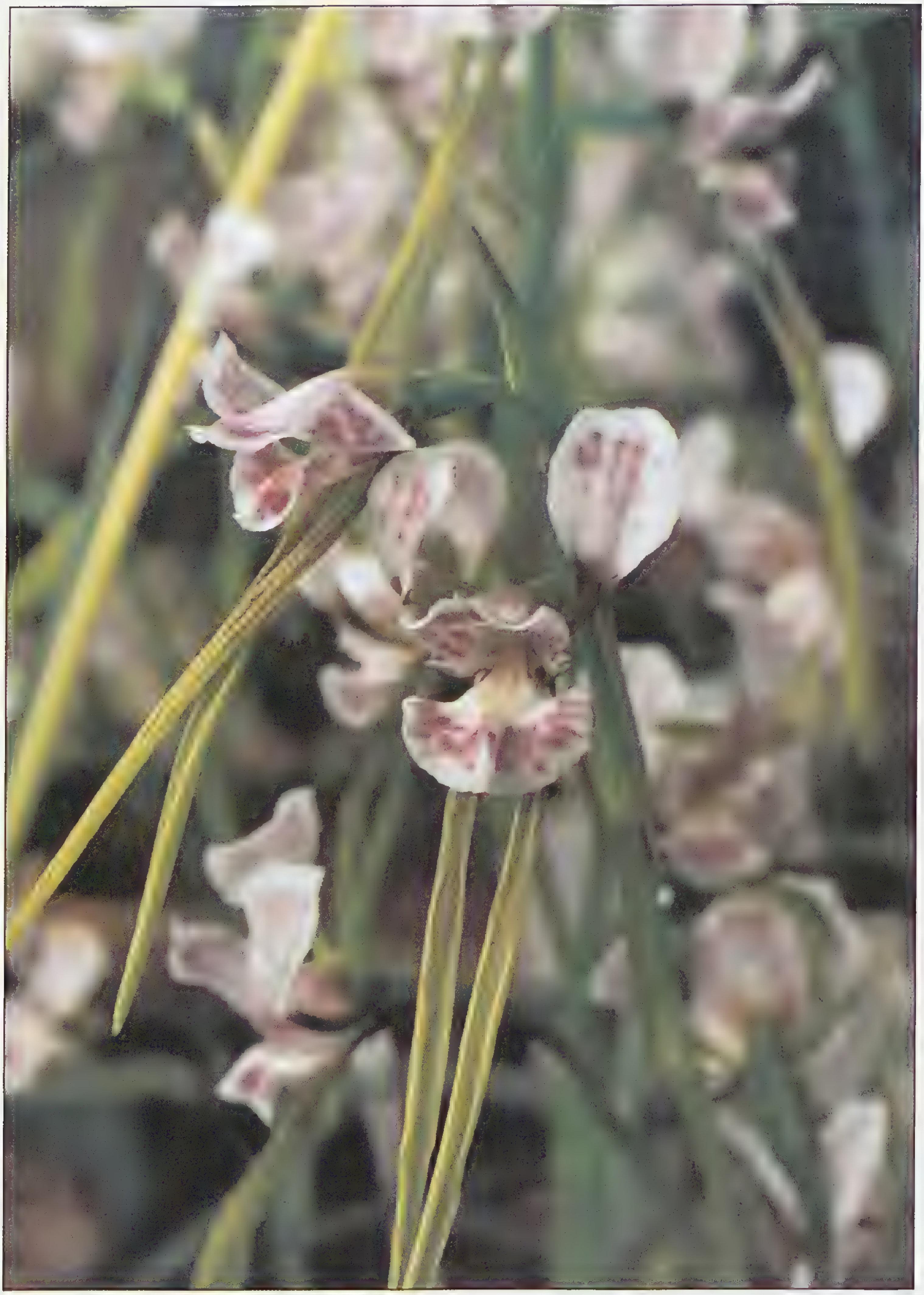
Mark Clements' research work took a different direction, so he sent the *D. fragrantissima* fungus down to Dale Tonkinson at LaTrobe University where work on rare orchids was continuing. Dale successfully grew the Diuris from seed symbiotically. LaTrobe University continued to use the Laverton North grasslands as the site for reintroduction *of D. fragrantissima*, planting some adult plants plus seedlings grown at Canberra and La Trobe.

As always happens, more changes. Dale Tonkinson left LaTrobe and funding for the rare and endangered species ended. Dale passed his collection of *D. fragrantissima* to the zoo for safe- keeping. The zoo??? I was to learn that they had great horticultural expertise, under the leadership of John Arnott, although no experience with terrestrial orchids. All of Dale's plants were in just two pots and thankfully, after a couple of years, on Christmas Day 1995 Colin Knight repotted what was almost the entire world's population of *Diuris fragrantissima* into about 100 pots. The zoo grew them on exceptionally well, but had the wisdom to distribute some of the plants around the following spring. About ten pots were shared amongst A.N.O.S.'s better Diuris growers. They were subsequently flowered and seed produced. At this time, Peter McCauley, a new member from South Australia, was fascinated with Diuris, especially this endangered species, and he took some seed to Kevin Western in S.A. Kevin had been doing tissue culture and growing orchids from seed, mainly epiphytes and European terrestrials, for about 20 years. He took up the challenge to germinate this endangered species and succeeded asymbiotically. His results were unbelieveable - I have never seen such large seedlings in flask. Kevin has continued to grow them from seed and there are now hundreds or probably thousands in flask (or deflasked) and growing on very well.

Back to Sunshine - the last remaining natural population. It has been looked after by several authorities and groups in recent years. It has been fenced, and when that first happened, more orchids appeared outside the fence than in it! It has been weeded and the site guarded during flowering time to prevent human damage. In 2000, several plants from the zoo were introduced, but it appears that they did not survive. The site is very small and surrounded by degraded areas and is badly affected by weeds and predators such as slugs and mice.

This species is listed as a Threatened Taxon under the Victorian Flora and Fauna Guarantee Act 1988 and Endangered under the Commonwealth Endangered Species Protection Act 1992. Under the Commonwealth Act, a Recovery Plan was prepared by the Department of Natural Resources and Environment, Victoria, for the years 1998-2002. The Recovery Plan has a short-term goal to increase plant numbers in the last remaining colony, to maintain and expand the species in cultivation and to establish new colonies at secure sites. The Recovery Program is overseen by the Threatened Orchid Recovery Team which has representatives from many organisations such as D.N.R.E, Parks Victoria, Royal Botanic Gardens, Zoo and A.N.O.S.

Many activities had been instigated by the Recovery Team. Work is undertaken at Sunshine to maintain the site, difficult as it is, which includes weed control, maintaining fencing and monitoring. A cultivation sub-committee has produced cultivation guidelines and guidelines for nurseries growing terrestrials for conservation use. Thanks to Kevin Western's successful flasking, hundreds of seedlings are growing on with plans to increase that to thousands. The genetic diversity in cultivated plants has been investigated by Liz James from the Royal Botanic Gardens. About two years ago, she checked the enzymes in 160



Diuris fragrantissima Photo Ivan Margitta

The photograph is of orchids grown by Dick Thomson from seed and taken in his shadehouse.

plants (almost the total population at the time) and followed that with DNA analysis. The results showed that there was good genetic diversity even though the plants were all seedlings from the one source. The Laverton North Grassland Reserve, about 40 hectares managed by Parks Victoria is the best site for a second population at this stage, where flowering plants were seen in 2000, from plantings in the 1980's, although none were seen between 1991 and 2000. Other potential sites are being looked at, and seed baiting trials will be commencing to find areas where the mycorrhizal fungus occurs naturally.

The conservation work continues, and with the various professional organisations and enthusiastic amateurs working together, it will succeed. Reference: Backhouse, G., Webster, A. and Arnott, J.(2000). Recovery Plan for the Sunshine Diuris, *Diuris fragrantissima* (Orchidaceae: Diuridinae) 1998-2002. Department of Natural Resources and Environment, Melbourne.

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Three volumes have been published to date:-

Volume 1, 1989.,
***Catalogue of Australian Orchidaceae*, M.A. Clements.**

Volume 2, 1991.,
***New Taxa of Australian Orchidaceae*, David L. Jones.**

Volume 3. 1998.,
***Contributions to Tasmanian Orchidology*, David L. Jones.**

Copies of
AUSTRALIAN ORCHID RESEARCH
and other publications are available from:

The Australian Orchid Foundation,
107 Roberts Street, Essendon 3040
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16th Australian Orchid Conference & Show

ADELAIDE, 18 - 21 September, 2003

Orchids in the Wine State

proudly hosted by

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16th Australian Orchid Conference and Show September 2003.

Although it may seem to readers that this date is a long way off, because of the large amount of planning and organizing, we are already sending off updates in a News Letter and contacting likely Guest Speakers, etc.

Conference Dates and Activities :
(from Tuesday 16th. September to Sunday 21st. September 2003.)

Activities planned :
Monday 15th. – Registration Booth only is open.
Tuesday 16th. – Show set up and Nomination of orchids for Judging.
Wednesday 17th. – Judging and Opening Ceremony.
Thursday 18th. – Northern Bus Tour, Lectures and Mystery Night.
Friday 19th. – Southern Bus Tour, Lectures and Hospitality Night.
Saturday 20th. – Native Orchid Bus Tour, Lectures, and Banquet.
Sunday 21st. – Morning Lectures, B.B.Q. Lunch, Take Out from 5 p.m.

Conference Venue :

All facilities are available in Centennial Hall in the Wayville Showgrounds, which is approximately 2 km. from the centre of Adelaide, adjacent to the South Parklands, with easy access by car, bus, tram and train, and ample car parking facilities.

Accommodation :

Adjacent to the South Parklands there are at least five moderately priced Motels, Hotels and Apartments, also International Hotels which are four and five star quality are situated in the City Centre.

Registration Fees :

A final figure is still being worked out and will include an opportunity for joint Registration and 'early bird' concessions.

Only Registrants will be able to be involved in the Conference functions.

Conference Theme :

The theme for the Conference is 'Orchids in the Wine State', to compliment the important Wine Industry in South Australia.

Activities Planned :

- Local Bus Tours, to see Native Orchids in the wild, visit local orchid nurseries and stop at wineries, are separately planned over three days.
- Opening Ceremony will be held in the Banquet Room at Wayville
- Closing Banquet will also be held in the Banquet Room.
- Mystery Night – can't tell you about this – (it is a secret!)
- Hospitality Night allows Interstate and Overseas Registrants to have a meal at the local's home and discuss orchid growing and other things.
- B.B.Q. lunch is planned as a fitting finale on Sunday, prior to take out.

There will also be opportunities to be involved in Pre and Post Conference tours.

Guest Speakers :

Guest speakers from all around the World, are being considered now.

If you wish to be considered as a guest speaker, please advise Reg Shooter (Lecture Chairman) by return mail or email grand@picknowl.com.au

Judging :

A detailed open schedule is being compiled and will include Grand Champion of the show, and several display categories.

All orchid growers will be encouraged to exhibit with growers more than 120 km from Adelaide being allowed to register cut spikes.

All qualified Orchid Judges who are Registrants, will be welcome to assist with the judging, including Championship classes.

For further information on Judging matters your contact is David Harmer by email deepee@smartchat.net.au

Commercial Sale Stalls :

Sale booths will be available and will be set up in Centennial Hall, for further details contact Don Gallagher : phone (08) 82657745 or fax : (08) 82657732.

Mailing List :

If you wish, to be placed on our obligation free mailing list please send your name and postal address to :

Orchid Club of South Australia Inc.
G.P.O. Box 730
ADELAIDE 5001 SOUTH AUSTRALIA.

Or email me on fishy@arcom.com.au

Hope to hear from you soon!

Richard Fishlock
Conference Chairperson.

Establishment of Orchid Conservation International.

A new charity to promote and coordinate international efforts in orchid conservation, in conjunction with the IUCN/SSC Orchid Specialist Group and other orchid conservation networks. Those of you that attended the 2002 Plenary meeting of the OSG at the 17th WOC in Malaysia in April, will be aware of moves to establish a new charity, Orchid Conservation International. A proposal was presented at this meeting, and an overwhelming vote was given in favour of its establishment. Subsequently, the proposal was also endorsed by the International Orchid Commission (IOC).

The Executive Summary from the proposal is copied below. If anyone would like to see a copy of the full proposal, please contact Shelagh Kell (shelagh.kell@dial.pipex.com) and a copy will be sent to you by email attachment.

PLEASE NOTE THAT OCI WILL NOT TAKE THE PLACE OF THE OSG, BUT IS A NECESSARY STEP TO OVERCOME THE LIMITATIONS THE OSG CURRENTLY FACES.

In addition to endorsement by OSG members and non-members present at the plenary meeting, and the IOC, the proposal has been favourably received by a number of other individuals and organisations, including Marie Selby Botanic Garden and members of the Board of Trustees of the AOS.

Two OCI Development Committee Meetings have been held to date. These have been attended by Ms. Shelagh Kell (OSG Executive

Officer), Dr. Phillip Cribb (OSG Chair), Prof. Michael Hutchings (University of Sussex), Mr. Philip Seaton (Chair, OSG Ex situ Conservation Group) and Dr. David Roberts (RBG Kew). A number of other individuals have been included in the consultation process, including: Ms. Marilyn Light (Chair, North American Regional OSG and OSG Education Committee); Mr. Udai Pradhan (Chair, Indian Subcontinent Regional OSG); Dr. Henry Oakeley (Royal Horticultural Society); Dr. Kiat Tan (National Parks Board, Singapore); and Dr. Wendy Strahm (Plants Officer, IUCN Species Survival Programme). We aim to have the charity established and registered by the autumn this year, and hope to launch OCI at EOC2003 in London next March. We have received an initial donation from Mr. John Tan, and further donations have been pledged by Lady McNeice over the two years, 2003 and 2004. We estimate the cost of establishment of the charity in the first year to be in the region of £40,000.00 (c. US $60,000.00) and are now seeking further funding. A full break down of the budget is included in the proposal.

We would be grateful if you would forward this message to your networks, including botanic gardens, universities and orchid societies, or any individuals that you think may be interested in supporting this venture. We look forward to your feedback. Shelagh Kell, Phillip Cribb.

EXECUTIVE SUMMARY "This document is an outline proposal for the establishment of Orchid Conservation International (OCI), a new charity to be registered with the Charity Commission for England and Wales (subject to Charity Commission requirements). OCI will work in conjunction with and in support of the existing IUCN Species Survival Commission's Orchid Specialist Group network (OSG), but will also involve other orchid conservation networks, and key players in the orchid world. The primary reason for this proposal is to set up an active charitable organisation that will have independent legal status, thus the ability to fundraise from governmental and non-governmental sources. OCI will act as the central coordinator of international efforts in orchid conservation, bringing the OSG and other orchid conservation networks into the formal, professional conservation sector."

Shelagh Kell
Executive Director Designate,
Orchid Conservation International Executive
Officer, IUCN/SSC Orchid Specialist Group

36 Broad Street, Lyme Regis, Dorset, DT7 3QF,
UK Telefax: +44 1297 444542
Email: shelagh.kell@dial.pipex.com

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Mutual gains - co-operative orchid conservation in south-east Australia

The Victorian Threatened Orchid Recovery Team will be holding a 3 day Symposium and field day on 16th, 17th and 18th October, 2002. The purpose of the Symposium will be to communicate the success of on-ground management and research under way in Victoria and will draw on the work of a wide range of individuals and organisations currently contributing to orchid conservation across the State. These include regional and head office NRE staff; the Royal Botanic Gardens Melbourne; RMIT University (Dept of Biotechnology and Environment); University of Melbourne (School of Botany and Burnley Campus); Royal Melbourne Zoo; Parks Victoria; the Australasian Native Orchid Society. Papers will address aspects of population ecology, horticultural research, molecular biology and applied management. Contributions from interstate agency colleagues have also been offered. If interested, please contact Fiona Coates (NRE Heidelberg - 9450 8618; Fiona.Coates@nre.vic.gov.au). Also planned is a 1-day field tour to visit sites of current conservation projects on the Mornington Peninsula and Belgrave areas (18th October), and a Symposium dinner at Kan Zaman Middle Eastern Restaurant, Richmond (16th October). Registration costs are likely to be approximately $50 (Symposium only), plus $34 (dinner + BYO) plus approximately $45 (field trip, including teas and lunch). To register your expression of interest to attend, contact Bridget Hayes, Conservation and Research Dept, Melbourne Zoo, PO Box 74 Parkville 3052 (tel: 9285 9343; fax: 985 9346; bhayes@zoo.org.au).

The Alum Mountain, an Orchid Wonderland

Len Field
lenfield@idl.net.au

Towering over the town of Bulahdelah, situated about 73km. NNE of Newcastle, NSW the Alum Mountain is a familiar site to travellers along the Pacific Highway from Sydney to Brisbane. It is about 5km long and 300m high, and was formed by an igneous intrusion of rhyolites and basalts in carboniferous times. Cooling of the intrusion, hydrothermally altered the rocks which, containing high proportions of aluminium, potassium and sulfur oxides, reacted to form Alunite, potassium aluminium sulfate or alum. This was about the largest deposit of the mineral in Australia and possibly the world. From 1883 to 1952 the Alunite was heavily mined for use as fertilizer and for water treatment.

For a small area this mountain would be one of the most orchid rich areas in Australia. It was first brought to notice to the orchid community when Mr. E Slater in 1930 found on the mountain an orchid, which proved to be a natural hybrid between *Dendrobium speciosum* and *Dendrobium kingianum*. Much debate has raged over the correct name for this orchid but it is now referred to as *Dendrobium* X *kestevenii* which is named after Dr. H.L. Kesteven who grew the original plant in his front garden for many years until it disappeared from there. Later many plants turned up that were claimed to be part of the original plant. In 1931 Mr. Slater found an unusual orchid growing underground which Rev. Rupp named *Cryptanthemis slateri*, but this name has now been changed to *Rhizanthella slateri*. There are two versions of how Mr. Slater found this orchid, one was that he was digging fence post holes when he came across this orchid and another version was that he was examining *Dipodium variegatum* when he discovered it. Since that time many plants of this unusual orchid have been found in the area, usually growing in conjunction with *Dipodium variegatum*. During my visits to this area over the past 50 years I have noticed that the mountain is rich in various types of saprophytic orchids.

The number of orchids found either on the mountain or at the base make an imposing list with well over 40 terrestrial orchids listed. While this list is impressive the epiphytes also are numerous and one that springs to mind is *Dendrobium speciosum*, which grows here in abundance. This could be one of only a few places that this orchid is found on the northern side of the Hunter Valley. Another orchid that deserves special mention is *Dendrobium kingianum*, which covers some areas in vast sheets. While *Dendrobium speciosum* is at it northern most habitat, *Dendrobium kingianum* is at its most southern range and while both these orchids are only a shadow of the vast amounts that covered these rock faces some years ago, they are still an awesome sight to behold. One thing in their favour to save them from illegal collecting is that neither *Dendrobium speciosum* nor *Dendrobium kingianum,* while beautiful in their own right, reach the size and perfection that some plants from other areas do. The *Dendrobium kingianum* growing here is a unique variety that has very short pseudo-bulbs and small pale pink flowers that are shy to bloom in nature.

Some other epiphytes that grow in large numbers on the mountain *are Cymbidium suave, Dockrillia linguiformis, Dockrillia pugioniformis, Liparis reflexa, Dendrobium aemulum, Bulbophyllum exiguum, Bulbophyllum shepherdii*, and I have also found *Bulbophyllum elisae, Dendrobium gracilicaule, Dockrillia fairfaxii* and *Dockrillia schoenina* to also be reasonably common. There has also been other epiphytic orchids which have been identified in the area.

Over the years A.N.O.S. Newcastle and A.N.O.S. Central Coast have had joint outings to the mountain and the orchids seen on one of these trips were *Cymbidium suave, Dendrobium kingianum* in their thousands and in flower, *Dendrobium speciosum* in flower and in great numbers, and *Dockrillia linguiformis* very prolific and flowering in vast numbers. This flowering was so spectacular it was one of the highlights of the day. Other epiphytes seen on the day were *Liparis reflexa, Dockrillia pugioniformis, Bulbophyllum shepherdii, Bulbophyllum exiguum*, (both these orchids were in huge numbers) *Dendrobium* X *kestevenii* and another highlight was a huge plant of the saprophytic orchid *Erythrorchis cassythoides*, which was in full bloom with thousands of golden yellow flowers.

The State Forests of N.S.W. keep the area well maintained with fresh water tanks, picnic facilities such as barbecues, tables etc. These are situated both at the top and bottom of the mountain and this would be one of the few areas that one can park the car, step out and immediately see orchids. A very short walk along well maintained and easy walking tracks with seating and well placed lookouts to see orchids growing in nature by their thousands, makes this a worthy stop on your next trip north along the Pacific Highway.

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Details of the 16th May, 2002 find of *Rhizanthella slateri* on the Alum Mountain, Bulahdelah

Adele Carrall
9 Meade St
Bulahdelah 2423

In the late afternoon of Thursday, 16th May, 2002, thirteen year old Evan Carrall of Bulahdelah, N.S.W. made the first discovery of the underground orchid *Rhizanthella slateri* on the Alum Mountain since 1985. Evan, who is not schooled at all, had learnt about the eastern underground orchid through natural learning techniques and his knowledge of the species and careful handling of the initial specimen he found has led to the first DNA testing of a fresh specimen of *Rhizanthella slateri* from the Alum Mountain.

Earlier in the day Evan, his parents and his sister had accompanied Christine Ping Griffin, who is a **Biripi woman of cultural belief**, when she visited the Alum Mountain to investigate a descriptive dream she'd had about an unusual snake. Using Christine's dream as a guide, they unsuccessfully performed a brief search of the area involved in the dream to try to locate the *Rhizanthella slateri*. While on the Alum Mountain Christine happened to ask about the quantity of wildlife to be found there and knowing that they'd overlooked some, Evan decided to return late in the afternoon to investigate the mountain's fauna.

Just on dark, thirteen year old Evan saw a small hole in the ground and while examining its contents, found a severed capitulum (or 'head') of *Rhizanthella slateri*. Knowing the scientific value of his find, Evan decided that it was too dark to safely attempt further investigation and placing the severed head of this rare and extremely fragile plant in a plastic freezer bag, ready for storage in a crisper, he returned home where, after carefully examining his specimen under the light, Evan, amazed at its unexpected beauty, exclaimed, "It's like a glowing gem."

Upon returning to the site of his find early the following morning Evan unearthed a *Rhizanthella slateri* colony; photographs of his find were taken and initial verification was obtained via emailing a digital image of his specimen to an orchid specialist who said, "It's the genuine article."

On Tuesday, 21st May, 2002 Evan guided six visiting orchid specialists to his find where they enthusiastically examined and recorded the colony.

On the afternoon of Friday, 24th May, 2002 Dr. Mark Clements of the Centre for Plant Biodiversity, the Australian National Herbarium (CANB) stated that initial DNA testing of the specimen provided by Evan had revealed a strand consisting of 700+ letters and that synchronising of the specimen was to take place over the next three days.

Currently the unique Alum Mountain and its wealth of flora, including other rare, threatened and significant plant species, is under threat of highway construction from the Pacific Highway 'Upgrade' route 'Option E'. Dr. Clements said *Rhizanthella slateri*, "Is of great value scientifically," and that alternative route selection must take place.

On Monday, 3rd June, Dr. Kingsley Dixon, Director Plant Science, Kings Park and Botanic Garden; Adjunct Professor, Faculty of Agriculture, The University of Western Australia; President, Australian Network for Plant Conservation (Inc.); Member of the Research Committee, Australian Orchid Foundation travelled to Bulahdelah to meet Evan and visit the site of his find. During his visit Dr. Dixon took pleasure in providing Evan with a great deal of additional information regarding this unique orchid.

During a recent interview on ABC radio Dr. Clements stated that he is also testing for the possibility that the *Rhizanthella slateri* growing on the Alum Mountain, Bulahdelah may be different from other species.

Evan, who prefers the orchid's original name *Cryptanthemis slateri* ('Cryptanthemis' meaning 'Hidden flower' and 'slateri' after its initial discoverer, Ernest Slater) is greatly concerned that, as this orchid is not readily visible, cannot be cultivated and is dependent upon surrounding vegetation for its survival, colonies may accidentally be destroyed during the Environmental Impact Study which is currently being carried out by the Roads and Traffic Authority employed company, PPK.

Regards, (Mrs.) Adele Carrall.

Malcolm Carrall's website A Glimpse Into The History Of Bulahdelah Mountain is: http://www.users.bigpond.com/mlclmcrrll/index.htm

Here's the URL to Adele's documentation of findings of *R. slateri* on the Alum Mountain:

http://www.geocities.com/adelecarrall/rhizanthellaslateri.html

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To Bulahdelah And Back

Alan Stephenson
astephenson@vtown.com.au

I have been corresponding by phone and E-mail with a contact in Bulahdelah for some months now with regard to the mysterious underground orchid, *Rhizanthella slateri*. The person concerned, Malcolm Carrall is associated with the local Historical Society and has concerns regarding the planned by-pass of Bulahdelah by the RTA. Several options have been proposed, most of which will adversely impact upon the habitat of *R. slateri*. Malcolm was given my name and E-mail address by Ron Kerr, a judge with the Australian Orchid Council and former editor of the Australian Orchid Review. He has asked me for help in the form of information on the orchid and what he could do to stop or slow down the RTA.

Rhizanthella slateri was originally named as *Cryptanthemis slateri* by Rev. H.M.R. Rupp, from a discovery by Edwin Slater of Bulahdelah in 1932. The current name was awarded by Mark Clements and Phillip Cribb in 1984. A second find on Alum Mt. was made in 1988 following a discovery at Wisemans Ferry in 1983. Other discoveries have come from the Blue Mountains during the 1990s with two in the Nowra district in 1997 and 2001. Pollinators are not known but are possibly ants or fungus gnats as these were observed during the recent photographic session.

It appears the preferred RTA option is planned to go through the site of the original find of *R. slateri* and I have been advising him of his options. These have been to contact Alan Dash, the ANOS Conservation Officer and local and State politicians to impress upon them both the historical and conservation aspects of this planned by-pass. Malcolm has done all of these things and also with my urging has proceeded with a Threatened Species listing for the orchid, which for some unknown reason has not already occurred. This has had the result of slowing down the RTA but work continues with blasting of tree stumps and seismic testing in the vicinity and a cutting 21 metres deep and 80 metres wide is planned for the site. A poll of locals indicates 88% prefer "Option A", which would take the by-pass to the west in an area close to the Myall River and mostly green pastures.

As luck would have it, Malcolm's son Evan (a quiet 13 year old) was walking along a track on Alum Mt. in mid–May and managed to find a flower head of *R. slateri* which had most likely been severed by an animal or bird scratching the ground. Running home, Evan grabbed his father and together they saw a plant containing seven flower heads. A digital camera was then borrowed, photos taken and E-mailed to me. I then contacted David Banks as he had expressed great interest in seeing a plant and had planned a visit this year in the hope one of the local plants would be in flower. Thus a party of travelers was organised. Leo Cady, John Riley, David and I went to Bulahdelah on Tuesday May 21st to view this marvel. To meet us were Malcolm and Adele (his wife), Evan and his sister Estelle, Ray Clement (Tinonee Orchids), concerned residents, Jenny, Del and John and even a reporter from the Manning River Times (Steve). Steve seemed unimpressed with the plant, partly because it was not in flower and also I am sure he wondered how otherwise seemingly sane adults could make such a fuss of something which looked like a series of fungi. Even though we were prepared with our own food our hosts provided lunch which was a surprise to most of us, except John Riley as he had been tipped off by Alan Dash.

After a quick lunch and introductions all round we went to the site and raked away the leaf litter to uncover six more heads of flowers wrapped snugly in the numerous bracts which envelope them. Further gentle exploration located three old flower heads with seed capsules intact and two smaller flower heads. From what I have seen of this species, these smaller heads could possibly flower next year.

No need to mention how many photos were taken but in addition to normal slide film, David used a digital camera for great results. They were E-mailed to me before I reached home that night. In the immediate area were several other species, some of which were in flower. *Corybas barbarae, Corybas sp. aff. aconitiflorus, Acianthus fornicatus, Dipodium variegatum, Cryptostylis erecta, Chiloglottis sp. (diphylla* ?)

After more social interaction Leo, Ray, John, David and I drove up the (stony, rough narrow) track to near the top of Alum Mountain. We were there so thought we had best make a day of it. (18 hours and 840kms.) Apart from some attractive grass trees, we saw *Dendrobium speciosum, D. kingianum, Dockrillia linguiformis, Liparis reflexa, Cymbidium suave, Corybas sp.* (probably *C. pruinosus*) and *Pterostylis sp. aff. alveata.* The latter was the only plant in flower on the mountain.

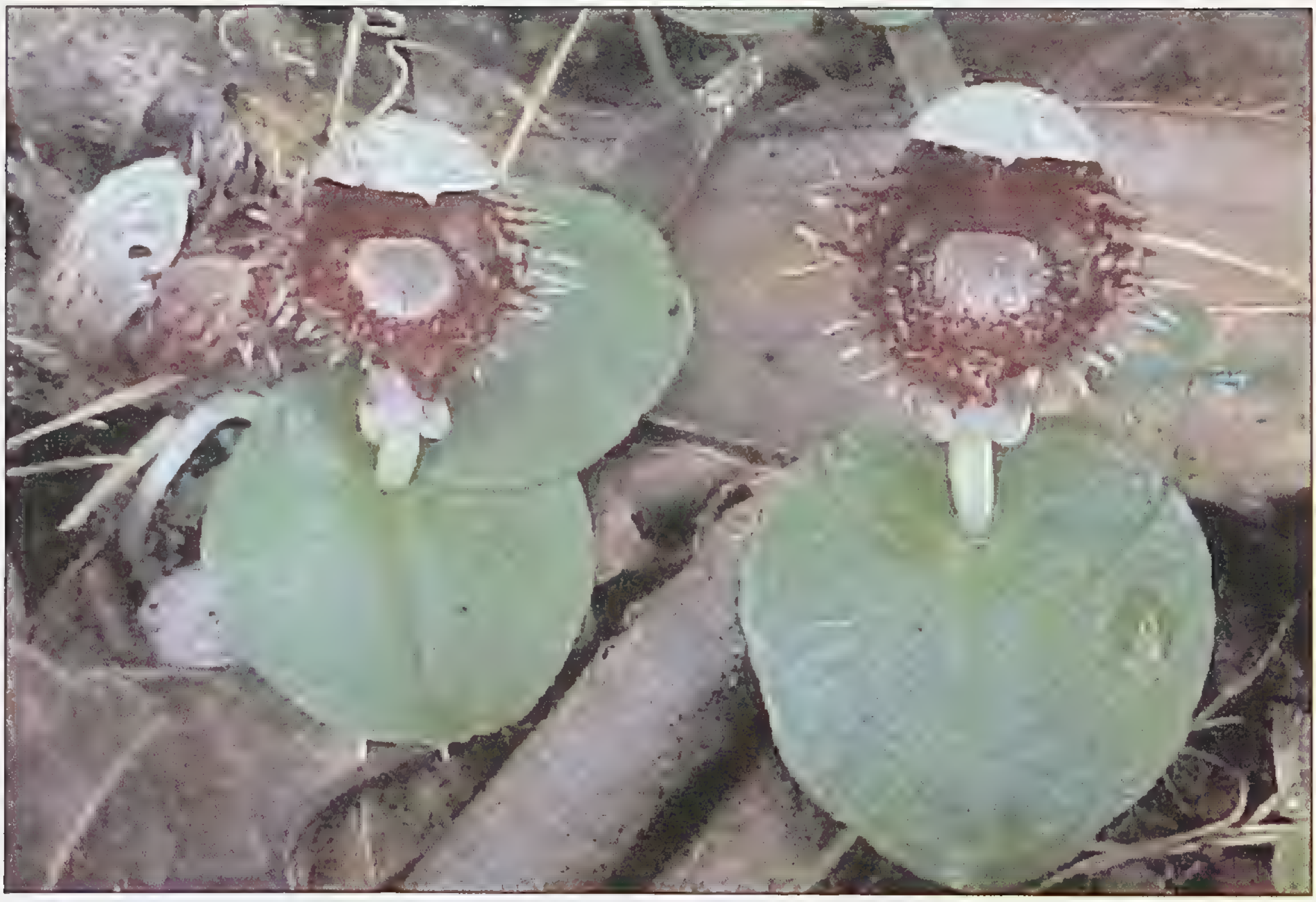
I had a great but tiring day (I drove) but it was worth the effort. I had seen *R. slateri* on two other occasions but four other species I saw in situ that day were new to me. *Corybas sp. aff. aconitiflorus*, which is an unnamed species, *Chiloglottis diphylla, D. kingianum* and *Corybas barbarae.* Another trip is certain when the plant is likely to flower and I will be kept informed by Malcolm. He is not the most popular person in Bulahdelah, as many residents prefer the by-pass to go along the route preferred by the RTA and have no historical or environmental conscience. The preferred route is the most destructive of all options but when we were at the top of Alum Mt. I looked to the west over flatter landscape and asked why this area was not considered. The answer was, the RTA would need to purchase several properties. So it appears the cheap and nasty option is preferred and to hell with saving something which is part of the intrinsic value of a small town.

UPDATE ON
***Rhizanthella slateri*_** August 2002

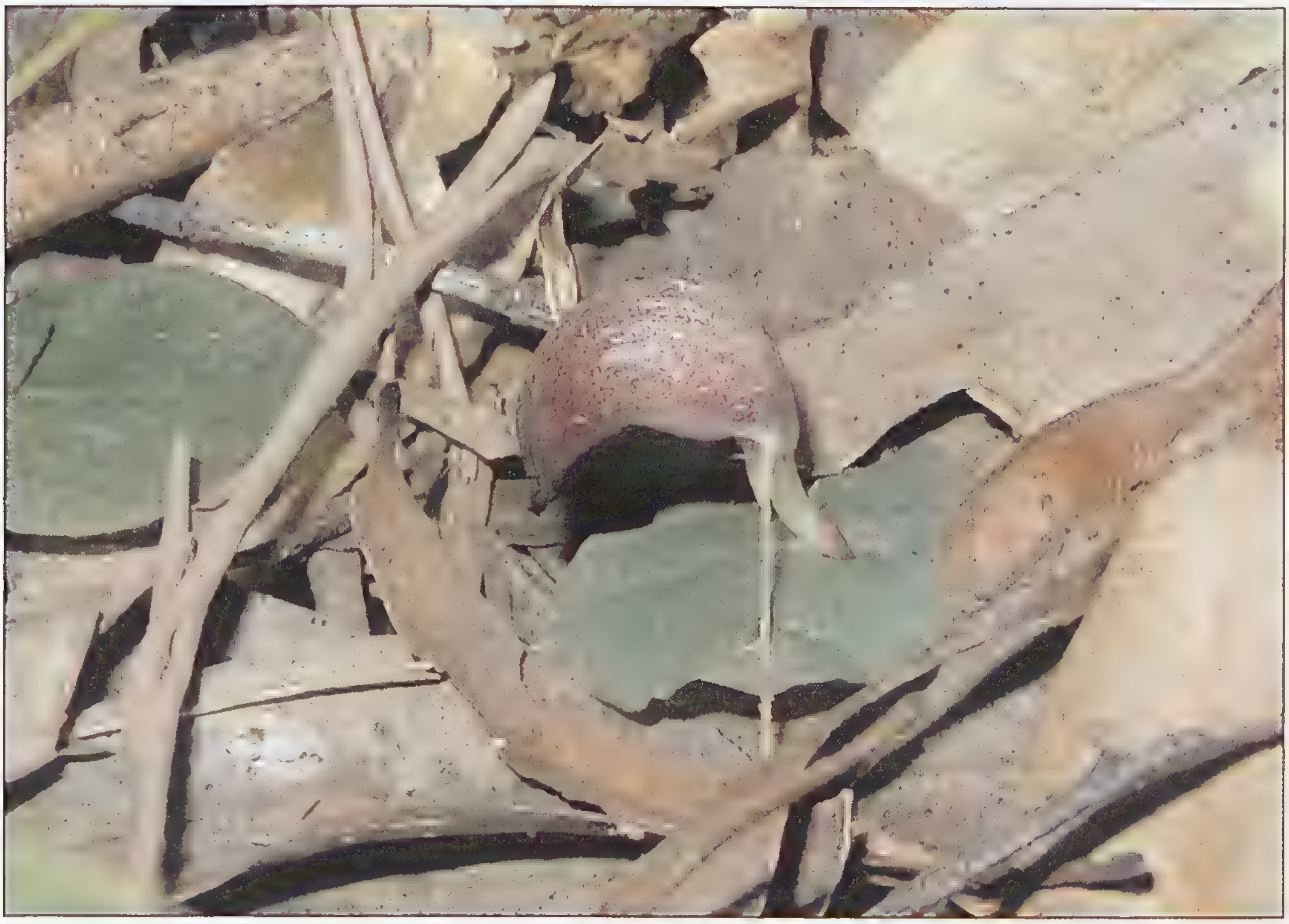
After the visit to Bulahdelah I contacted Dr. Kingsley Dixon, Director of Plant Science at Kings Park and Botanic Gardens in Perth to inform him of the latest find of *R. slateri.* Dr. Dixon had contacted me via Ruth Rudkin following the discovery by a Zoologist friend and myself of *R. slateri,* in September 2001 near Vincentia on the South Coast of NSW. I had promised to keep him informed of any developments with the orchid. Malcolm Carrall had advised Dr. Mark Clements of Canberra Botanic Gardens of the discovery made by his son Evan and plant samples have been sent to Canberra. As luck would have it Dr. Dixon was to be in Sydney at the end of May and after his business was concluded he persuaded a friend to drive him to Bulahdelah where he made contact with Malcolm Carrall and was later taken to the site.

I have since been informed by Malcolm of some damage to the plant. Fortunately the damage is not of the human type but only slight chewing by an animal or bird and the orchid is still largely intact. Some unobtrusive effort was made to avoid further damage.

Following the discovery Malcolm has had a discussion with the Hon. Carl Scully, Minister for



Corybas pruinosus (in situ at Alum Mountain) Photo Malcolm Carrall



Corybas affin. *aconitiflorus* Photo Peter Eygelshoven

Roads and Transport in NSW, impressing upon him the need to conserve this plant and the type site for historical and botanical reasons. As a politician Mr. Scully listened but made no promises.

Recently the NSW Parliament sat in Nowra and I managed to get some time to speak with the Minister and again he listened and again made no promises, except to get Mr. Bob Higgins, Project Manager for the proposed By-Pass of Bulahdelah to contact me, which he has done. I consider my self fortunate to get an interview with the Minister as the subject was not a local matter but connected with events over 400 km from Nowra. The Bulahdelah By-Pass is costed at 150 million dollars and its importance is obvious to anyone who has travelled the existing road. However as I mentioned to the Minister and his Project Manager "It would be a criminal act if the orchid was buried under four lanes of bitumen".

R. slateri at the time of my discovery was not listed as either endangered or vulnerable but at my direction Malcolm has forwarded a nomination and it is currently under consideration. Under the legislation the Scientific Committee is required to wait 150 days following all representations, to make a deliberation, although an "Interim Protection Order" has been instituted. So now we wait but in the meantime it would not hurt for concerned ANOS members to write their own letters to the Minister to lend as much weight as possible. Letters should be sent to Hon. Carl Scully, Minister for Transport, Minister for Roads, Level 34, Governor Macquarie Tower, 1 Farrer Place Sydney, NSW 2000.

Because this species is encountered so infrequently, every find must be protected.

Alan W Stephenson.

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IRA BUTLER AND BILL MURDOCH TROPHY NOMINATION FORMS NOW AVAILABLE ON THE INTERNET

Nominations for the Ira Butler Trophy for the Champion Australian Native Orchid Hybrid of the Year and the Bill Murdoch Trophy for the Champion Australian Native Orchid Species of the Year must be received by the Committee by 11 November 2002 without exception.

Nomination forms and the requisite number of slides should be sent to P.O. Box 899, Willoughby, 2068.

Nominations for the Ira Butler Trophy may come from the Champion Australian Native Orchid Hybrid of a Show, or the winner of its section or class if there was no Champion Australian Native Hybrid category. Similarly, nominations for the Bill Murdoch Trophy may come from the species which is the Champion Australian Native Orchid Species of a Show, or the winner of its section or class if there was no Champion Australian Native Species category. For both Trophies, nominations may come from plants which have been awarded an FCC, AM, HCC or AD by any recognized judging authority.

Further information and nomination forms are now available on the ANOS internet site: www.anos.org.au. Queries should be directed to 9267 7472 (w), 9417 2369 (h), 9267 7883 (fax), or by email to capell@zed.com.au

Roslyn Capell
Hon. Secretary
IBTC

Amazing Treefern Pots

Bill & Lorraine Dobson
34 Lynwood Ave,
Cromer NSW 2099

We have used many materials as mounts to establish our orchids on over the years, however in the past 3 years we have established more species on treefern and have found that it is one of the best. We like treefern as a mount for its ability to remain moist yet allows the roots of the plant to breathe. We have various plants on mounts both vertical and horizontal and also growing in these innovative treefern pots.

Tree fern is a great material to use for plants it can be as wet or dry as you like. Has a structure that seems to encourage roots to jump on, in, and through it. The plant can be rigidly established to it in a short time.

Treefern Slabs

In our bush-house we have treefern slabs that are vertical on which we grow *Dockrillia striolata*, *Dockrillia pugioniformis*, as well as exotic species such as *Bulbophyllum lobbii*, *Oncidium gardneri* and *Epidendrum farlanthum*. The roots have totally taken over the mount of *Dockrillia striolata* and it is important to remember to use a mount that is large or larger than you expect the plant to grow. We also have a *Dendrobium falcorostrum* that is on half a treefern log, which is suspended horizontally, as it is going to stay on this mount for ten years and in that time, hopefully, will grow to a specimen size.

Treefern Pots

Treefern pots are basically a short length of treefern usually 100 to 125 high by 150 mm in diameter, with a hole drilled in the centre about the size of a 75 or 80 mm squat pot. The idea is to get the plant established in the media then it will grow on, through and over the treefern. Depending on the plant you are going to place in it you can use various media to pot the plant in, from sphagnum moss to bark or a combinations of bark and sphagnum.

We have been having success with a combination of medium and fine bark and polystyrene beads. This, in our conditions, I find allows the plant enough moisture retention but air space to encourage the plant roots to breathe and get established. The treefern pots are then placed on seedling trays that have 15-20 mm depth of small pebbles, which are the size that would go in a fish tank, covering the bottom. This will trap and retain moisture and allow the plants to remain cool in the summer months. The styrene beads will also help to maintain a warmer environment for the root ball in winter. If the root ball is protected the plant will be happier and healthier.

Mostly the plants I have in these pots are epiphytes that come from moist mountain forests. In nature they will have their roots on the bark of trees or tree ferns that are covered in mosses, and are saturated daily with rain or mists. Included in this group *are Dendrobium pentapterum*, *Dendrobium violaceum*, *Dendrobium lawesii*, *Mediocalcar decoratum* and exotics such as *Sophronitis coccinea*, *Maxillaria sophronitis*, *Neolehmannia porpax* and recently a *Bollea ecuadorensis*. The plants require a reasonable amount of water until they are established. I find that when moss starts to grow on the treefern then the plant, as whole starts to thrive. The *Sophronitis coccinea* has thrown roots right through the bottom of the 'pot' and will, I hope, eventually turn into a ball of foliage and flowers.

When the plants have become established they can take their place on the bench with other plants. With the moss growing on them and when they are flowering they look like a little slice of nature.

Pots and slabs can be obtained from:

Ray Clement of Tinonee Orchid Nursery

768 Tinonee Road, Tinonee NSW 2430

Phone 02 6553 1012

or

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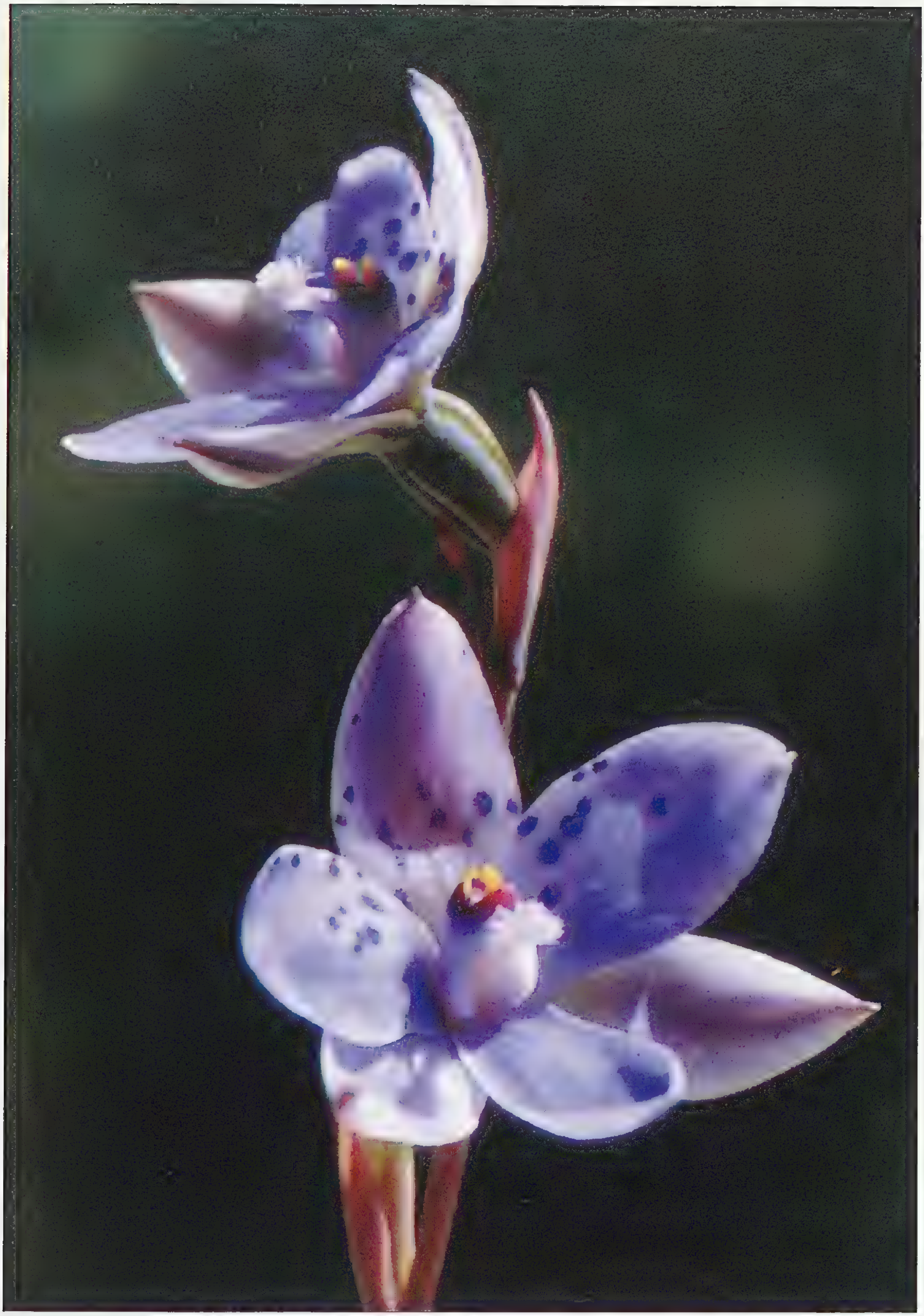
Some samples of the treefern pots growing in seedling trays to help induce the growth of mosses, which in turn helps keep a more humid stable atmosphere around the orchids.

Photos Bill Dobson



Thelymitra juncifolia Photo Peter Tonelli

Orchidology in Tasmania...1642-2000

an illustrated synopsis by Peter Tonelli

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The Australian island state of Tasmania including the Bass Strait archipelago and further south to the sub Antarctic island of Macquarie, has some one hundred and ninety five recorded native Orchids, sixty-two (about one third) are recognised as endemic along with two sub species. For over 200 years a large number of professional Botanists have made a significant contribution to the knowledge of our orchid flora, tribute should not only be paid to past and present professional taxonomists, but also those tireless enthusiastic collectors who often followed unrelenting in the footsteps of these men and women of science - in all seasons and weather often over rugged terrain to record and photograph these botanical gems.

Although the West Australian coast appears to have been explored first by the Dutch and Portuguese around 1600, Tasmanian history records the first landing of a European on its shores by the Dutch navigator and explorer, Abel Tasman [1603-59] in November 1642. On behalf of the Governor-General of the Dutch East India Company, Anthony Van Diemen, Tasman led an important voyage of exploration investigating the possibility of a fast trade route to Chile and Peru, facing unknown seas he followed the prevailing winds - sometimes referred to as the 'Roaring Forties', westward across the Indian Ocean from the island of Mauritius.

On sighting the (west) coast of an uncharted land, he immediately named it Van Diemen's Land (later changed to Tasmania in 1854).

In reference to this early record of island nomenclature we have *Corybas diemenicus,* the type specimen collected in 1837 by Ronald Gunn at Circular Head and formally described by John Lindley at Kew, three years later. The only botanical record detailed in Tasman's log was that of a shore party entering what is now known as Frederik Hendrik Bay in the south on the 1st. of December 1642, they observed large trees (*Eucalyptus* spp.) into which rough steps had been cut up the trunk about two meters apart with a crude axe, fearing the land was inhabited by giants they retreated in haste and sailed northeast towards New Zealand on 4th December not having sighted those responsible - the island's indigenous aboriginal population.

Tasman was searching for the legendary Terra Australis or Great South Land, [Australia] this name relates to two orchids, the epiphyte *Sarcochilus australis,* the type collected by Ronald Gunn at Emu Bay, Burnie in 1836 and *Spiranthes australis* from Port Jackson (Sydney) N.S.W. in 1802 by Robert Brown.

George Bass and Matthew Flinders eventually dispelled any evidence of land connection to the mainland in 1798 by completing a circumnavigation of the island in a twenty five ton vessel called the *Norfolk* and respectfully named the two mountains first sighted by Able Tasman one hundred and fifty six years earlier as Mt. *Heemskerk* and Mt. *Zeehan* in honour of his two ships. The separation from the Australian mainland [by Bass Strait] was to be a major factor in the determination of future botanical discoveries.

Prasophyllum australe was one of the first terrestrial orchids recorded in Tasmania, **David Nelson** [? - 1798] a gardener from Kew and one of the crew aboard either *Resolution* or *Discovery* on Captain James Cook's [1728-1779] third and fatal voyage to Hawaii in January 1777, sponsored by Sir Joseph Banks [1743-1820], this journey of scientific observation was not only to observe the transit of Venus, his men of science were to also continue the collection of zoological and botanical specimens.

Anchored in Adventure Bay off Bay Bruny Island for four days, Nelson's orchid discovery would become the type specimen to describe this new Genus *Prasophyllum* some thirty years later by the British botanist Robert Brown. Orchid references to Tasmania can be observed in the recent naming of two endemic species *Genoplesium tasmanicum* from near Hobart and *Pterostylis tasmanica* from Rebecca Creek.

In 1792 one of the French botanist on the d'Entrecasteaux expedition **Jacques-Julien**

Houten de Labillardiere [1755-1834] also collected summer and autumn flowering specimens around this location in southern Tasmania, recording the types for *Eriochillus cucullatus, Chiloglottis reflexa, Cryptostylis subulata* and *Pterostylis alata*. In 1793

England and France were at war so Labillardiere's collections were seised by the British after the French ships arrival in Java on the return journey, the plant collections eventually ended up in the hands of Joseph Banks in London who respectfully returned them untouched to their owner after the French defeat by the British navy at Waterloo in 1796.

During Capt. Matthew Flinders' voyage to Port Jackson (Sydney) in 1803, collecting became more systematic for aboard his ship the *Investigator* was a 27-year-old Scottish Army surgeon **Robert Brown** of the British museum, also representing the botanical interests of Sir Joseph Banks in London.

Under the command of Lieutenant David Collins, Brown crossed Bass Strait in the small sixty ton brig the *Lady Nelson* and entered the mouth of the Tamar River at Port Dalrymple (George Town) on Boxing-day 1804. Brown collected the type specimens of *Thelymitra nuda* and *Caladenia patersonii*, which he later named in honour of his friend and fellow collector, Colonel William Patterson of the 102nd Regiment, further discoveries were *C. latifolia, C. congesta, C. deformis, C. dilitata, C. filamentosa, C. gracilis, Pterostylis nana, P. pedunculata* and *P. cucullata*, the latter species has now vanished from its original locality, however this spectacular Greenhood was rediscovered in vast numbers on Hunter Island off the far north west coast by the late David Pinner from Devonport in 1971.

Brown returned for a brief time to Port Philip (Melbourne), then with Lieut. - Governor David Collins, then sailed south again to the new settlement of Risdon Cove, shortly after arriving he assisted in moving the entire settlement across to the more amicable western side of the Derwent River to Sullivan's Cove (Hobart) at the base of Table Mountain, (Mt.Wellington) which he would climb on many collecting forays often in the company of Rev. Robert Knopwood.

Although only in Hobart 'Town' for nine months, Brown wrote to Banks in September 1804 with details of some 540 new plants he had collected, eventually publishing his findings in *Flora Montis Tabularis* (Flora of Table Mountain). British herbarium records reveal Brown's orchid collection from southern Tasmania consisted of *Pterostylis dubia* and *P. squamata*.

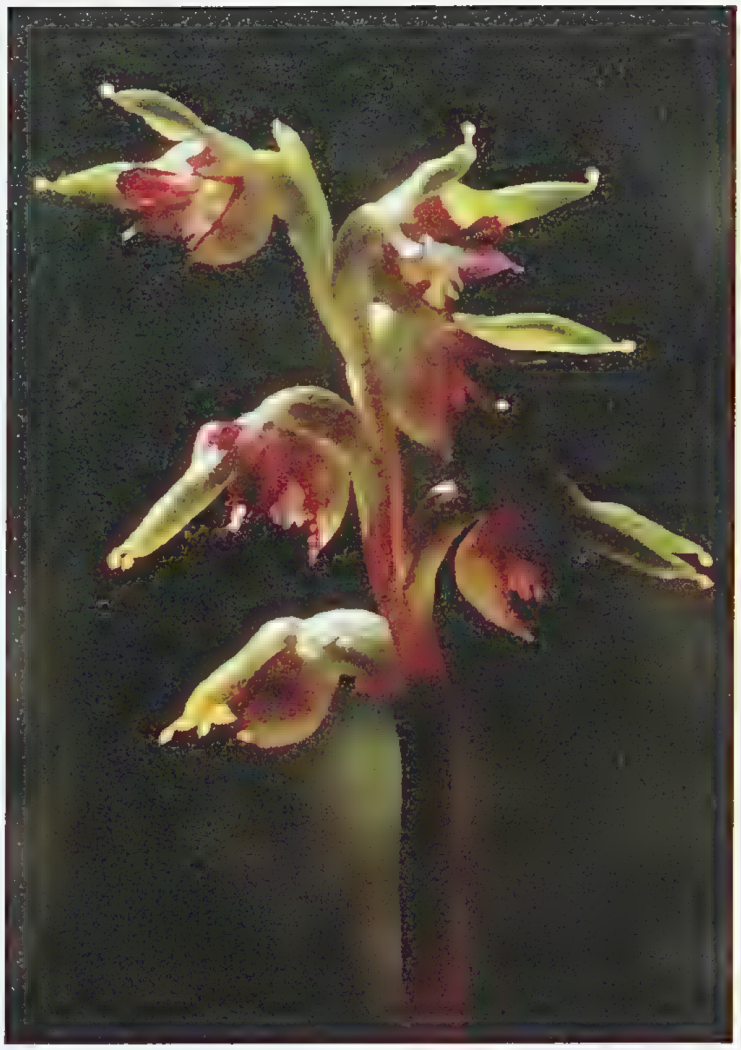
Around 1836, appointed colonial Police Magistrate **Ronald Campbell Gunn** [1808-1881] an acknowledged enthusiastic and energetic botanist, collected in some of the most rugged and poorly explored areas of Tasmania, usually in the company of fellow botanist and surgeon Dr. Joseph Milligan of the Van Diemen's Land (pastoral) Co. at Circular Head in the far N.W. of Tasmania.

Their plant specimens were consistently packed and forwarded to either of two British plant Taxonomists - Professor **William H. Hooker** [1785-1865], a remarkable man without any formal botanical training, of Glasgow University, or Professor **John Lindley** [1799-1865], Taxonomist, gardener and botanical artist from Kew, both these men reached great positions of notoriety during their life long involvement in the Natural Sciences. *Caladenia lindleyana* and *Prasophyllum lindleyanum* originally treated by Heinrich Reichenbach [1823-1889] honours the work done by Lindley, a great pioneer orchidologist.

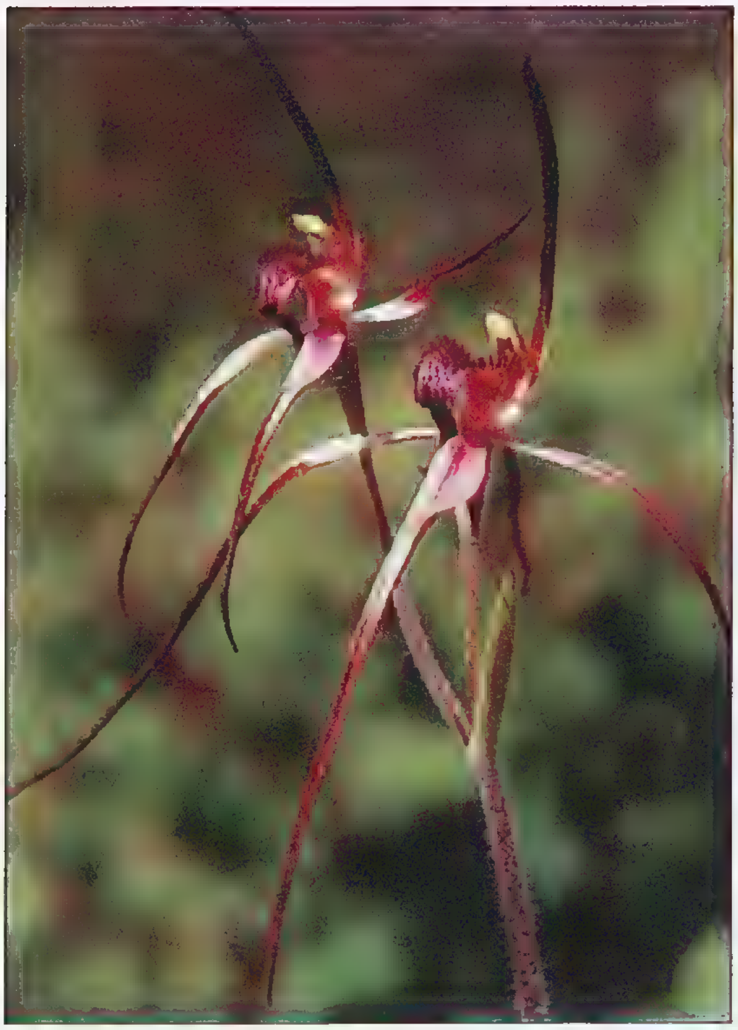
William Hooker formally described *Genoplesium dispectans* and *Townsonia viridis*, the types located near Mt. Wellington by his son Joseph, while John Lindley appears to have dealt with Gunn's specimens from the Circular Head area, these included *Burnettia cuneata, Caladenia angustata, Calochilus herbaceous, Corybas diemenicus, Diuris lanceolata, Genoplesium brachystachyum, Prasophyllum brevilabre, P. rostratum, Pterostylis aphylla, P. furcata, Thelymitra antennifera, T. aristata, T. cyanea, T. juncifolia*. Gunn's great contribution to orchid science in Tasmania was respectfully recognised by Lindley with the discovery and naming of the type *Chiloglottis gunnii* in 1837.

Past Taxonomists allowed for a broad variation within this taxon especially with the calli grouping on the labellum lamina, however an examination of the taxon by Jones 1998 defined three distinct species, the other two being *C. grammata* and *C. triceratops*, the latter with three obvious tall calli protruding at the base.

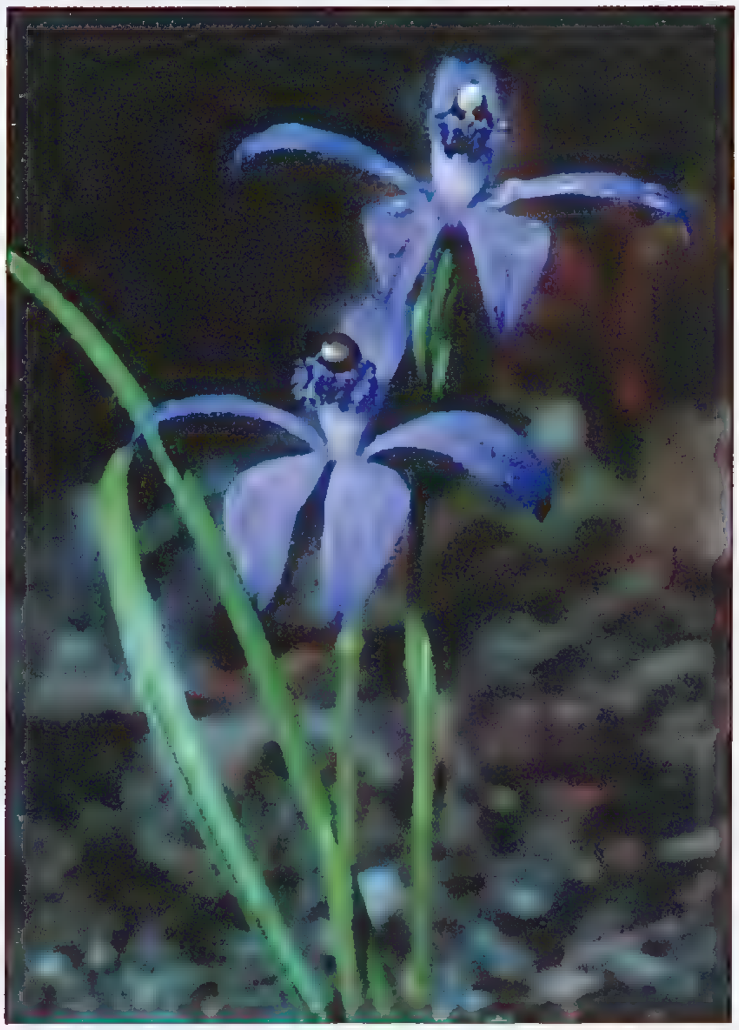
MJ Firth



Genoplesium brachystachyum



Caladenia caudata



Caladenia deformis

Photos Peter Tonelli

Gunn gathered around him a keen group of local naturalists and history records the prominent landowner Robert Lawrence from Launceston along with his convict 'gardener and botanist' George Morgan and another convict assigned to Gunn, James Lee. The Rev. James Backhouse, a missionary, and east coast surgeon George Story, who later became Director of the Botanical Gardens, Hobart. Charlotte Smith from the Circular Head area was an avid orchid collector for Gunn and located many specimens until her accidental death in 1838 at the age of only 29.

On August 16th 1840 two British ships *Erebus* and *Terror*, the former under the command of Captain James Ross entered the Derwent River, *Erebus* a day later than her sister ship. Recovering from extensive damage resulting from a hurricane force storm not far from the Tasmanian mainland, both ships were forced to anchor for three months until the stripped sails and rigging on *Erebus* were replaced and smashed life boats repaired, both ships were eventually recalked and painted.

Attached to this epic expedition to the Antarctic region was another surgeon and botanist, **Joseph Dalton Hooker** [1817 – 1911], son of the great taxonomist William Hooker. In the company of his father's long time friends Ronald Gunn and Robert Lawrence, ample time was afforded to exploration, collecting and preserving generous amounts of Tasmania's natural wealth. Unfortunately an early collection of this precious cargo dispatched by Joseph Hooker to his father in Scotland aboard another ship leaving Hobart was later to be lost at sea. Both Hooker and Gunn in particular made impressive botanical excursions into the upper reaches of the Derwent River catchment and the Port Arthur penal settlement area. Hooker later published the classic reference to Tasmania's botanical potential, *Flora Tasmaniae*, and placed great tribute upon Gunn in the introduction.

William H. Archer [1820-1874], land owner, parliamentarian, architect and botanical illustrator became a member of the landed gentry upon the death of his father and was able to devote much of his time to botanical interests for J. D. Hooker. Not only did he collect numerous Tasmanian plants, but also worked with him for a time at Kew. Acclamation was afforded Archer in *Flora Tasmaniae* in which Hooker writes:

"I am indebted to this gentleman for many of the plants described and much of the information in this book, as well as to the thirty additional orchid plates".

Hooker named *Genoplesium archerii* discovered C.1858 near his Northern estate 'Cheshunt' in honour of this first Australian born orchidologist.

In 1903 the first official text book available to students of botany was the *Tasmanian Flora* produced by State dental surgeon, **Leonard R. Rodway** [1853-1936], Appointed Hon. Government botanist in 1896, he like Gunn, gathered an enthusiastic group of correspondents and collectors to build his Hobart herbarium, many being his family members, Rodway detailed some eighty indigenous orchid species in his book at the time.

Herman M. R. Rupp [1872-1956] was an Anglican clergyman and botanist whose presence in Tasmania was all too brief. In 1920 he acted as *locum tenens* at Holy Trinity church, Hobart and was the first Rector of St. Aidan's church, East Launceston in 1921-22, whilst there he made many botanical excursions to Mt. Barrow as well as the wooded areas along the Tamar River. Rupp collected widely in most plant groups, but it was not until 1924 that he concentrated on the Australian orchids on which he wrote over 200 papers. His authoritative books on New South Wales species published in 1930 and 1943 are a tribute to this 'Orchid Man'.

In 1965 **Miles John (Jack) Firth** [1907-1967], a teacher and later District agricultural officer, published the first 'laymens' guide to the *Native Orchids of Tasmania* with 130 species recognized at the time, it was the literary substance of Firth's passion and vast knowledge of the island species with precise details of distribution and habitat requirements. For a long time it remained the basic reference for both amateur and professional orchidologists, Jack's personal contribution is remembered in his discovery of *Genoplesium firthii*, a micro species from Friendly Beaches near Coles Bay on the east coast, the type detailed by his friend Leo Cady. [1936-]

The study of Tasmanian orchids did not develop in isolation as many enthusiastic field workers were now collecting and lodging specimens with principal mainland herbaria where they are duly examined and catalogued.

Amongst these people were many noted authors and illustrators like **W. H. Nicholls,** whose book *Orchids of Australia* covered almost all known species from every Australian state. This superb reference produced in 1979, eighteen years after his death combined a very detailed text with beautifully hand-illustrated specimens. Now considered a rare masterpiece in botanical publishing, it enabled all enthusiastic students of Orchidology a new appreciation and insight into the natural order of speciation in Australia. Nicholls described the type for *Caladenia caudata* in 1948 and *Prasophyllum robustum* in 1940 the latter considered extinct until rediscovered by the author on a hillside near Latrobe in 1995.

Dr. **Winifred Curtis** A.M., D.Sc., F.L.S. was born in England in 1905 immigrating with her parents to Tasmania in 1939. After a life-long dedication as teacher, researcher and publisher at the Department of Botany, University of Tasmania, Hobart, Dr. Curtis officially retired in 1969 although still maintaining an active involvement as Hon. Research Associate with the Dept. of Plant Science, as well as Hon. Botanist at the Tasmanian Museum and Art Gallery herbarium at the University to this day aged 95. Between 1956 and 1995 Dr. Curtis produced five definitive volumes of the *Students Flora of Tasmania. 4a-Orchidaceae,* which was published in 1979, with detailed descriptions, plant keys and illustrations, another major step forward. Part 4a remained the revised standard reference for the next decade. Five species were defined as endemic to Tasmania. Dr. Curtis' contributions to Tasmanian Botany have been suitably acknowledged by the naming of two nature Reserves. One dedicated the 'Waverly Hill Flora Park' at Bellerive on the eastern shore of the Derwent in her honour, the site for the endemic type *Caladenia caudata* found by Dr. Curtis and described by Nicholls in 1947, the other an orchid rich bushland reserve at Scamander on the East Coast.

Native orchids are being studied in greater detail today having been listed as High Order flora in the Parks and Wildlife scientific report No.2 in 1991.

In 1996, the Tasmanian Parks and Wildlife Service, Dept. of Environment and Land Management with assistance from the Commonwealth of Australia under the National Estates Grants Programme and the Australian Orchid Foundation completed an *Orchid Atlas of Tasmania.* The appointed project officer was David Ziegler. After spending almost three years reviewing and sampling species in the field, plus tackling many other environmental issues, his findings contributed an important segment towards the formation of the **R**egional **F**orest **A**greement and determination for the Threatened Species Protection Regulations / Act 1996. Some 10,000 records were entered into the Department data-base in the course of the atlas project, 75% were contributions by orchid enthusiasts and naturalists whose efforts represented a comprehensive coverage of the most accessible areas of Tasmania and Bass Strait Islands.

Herbarium records from Hobart HO., Launceston Q.V.M., Melbourne MEL. and Canberra CANB. were examined and recorded along with various Departmental collections; the task of evaluating the reliability of records was compounded by a significant amount of taxonomic appraisal being conducted in other Australian states. By the time the *Orchid Atlas of Tasmania* was published many corrections and changes were made to both genera and species mainly because of erroneous historical records resulting in new discoveries, incorrect Type identification or general 'splitting and lumping'- it was only a matter of time before a new detailed reference would be needed! At the Centre for Plant Biodiversity Research / Australian National Herbarium [Orchid Research Unit] in Canberra, principal taxonomists **David L. Jones** and **Dr. Mark Clements** were publishing occasional papers and journals, resulting in *Australian Orchid Research*, Volume 3. (Contributions to Tasmanian Orchidology 1-9) 1998.

Some species recognised by Jones and Clements as either new discoveries or mainland specimens that naturally occur in Tasmania are by example – *Acianthus pusillus, Caladenia campbellii, C. helvina, C. saggicola, C. tonellii, C. transitoria, Corybas incurvus, Crytostylis robusta, Dipodium roseum, Diuris chryseopsis, D. orentis, Prasophyllum olidum, P. pulchellum, Thelymitra erosa.* By now Tasmania's Native orchids had been extensively researched, re-described, mapped, given new keys for identification and in most cases photographed. At the end of 1998 an opportunity existed for another updated publication on Tasmanian Orchidaceae plus enhanced new references produced for the other

Australian States. In November 1999, Miegunyah Publishing at Melbourne University Press produced number twenty-eight in the second series of the Miegunyah volumes, made possible by established bequests –*The Orchids of Tasmania* by Jones, Wapstra, Tonelli and Harris was finally presented. This beautifully illustrated book now describes in great detail every known Tasmanian orchid in the year 2000. Its authority rested on two key projects, one the survey Atlas of Tasmania's orchids published in 1996, the other a full revision of the major genera funded in 1998 by the Australian Orchid Foundation. In all cases the research of orchid specialists was underpinned by the enthusiastic record keeping of many others, regarded as an invaluable handbook and major contribution to science, its outstanding features include:

- Colour photographs of every species.
- Drawings and location maps.
- Traditional identification keys.
- An innovative 'leaf key' for identification of 'out of season' plants.
- Pointers to instant feature recognition of each species.
- Notes on taxonomy, distribution, habitat and flowering times.
- A comprehensive glossary and index.

Despite the progress made in the last forty years we are still mind-full of the words detailed in the forward of W. H. Nicholls edition *Orchids of Australia* by his long-time friend and colleague Jim H. Willis (then Assistant Government Botanist at the Melbourne Herbarium)

"May it also awaken much more interest in our magnificent (orchid) flora, and stir up a desire to fight for the protection of what yet remains".

In completing this synopsis, an evaluation of referenced Taxonomists / collectors and the number of species described are analysed by the following:

- **Robert Brown** R.Br.- 16 species, 9 resulting from material collected by Colonel William Patterson.
- **John Lindley.** Lindl. - 28 spp., all from specimens provided by R.C.Gunn.
- **Joseph Hooker.** Hook.f. - 4 spp.
- **Jacques La Billardiere.** Labill. - 4 spp.
- **Heinrich Reichenbach.** Rchb.f.- 4 spp.
- **Ronald Gunn.** Gunn - 30 spp.
- **David Jones.** D.L.Jones - 64 spp., with **Mark Clements** M.A.Clem. -13 spp.
- **Geoff Carr.** G.W.Carr - 3 spp.
- **Winifred Curtis.** W. M. Curtis -1 sp.
- **Leo Cady.** L.Cady -1 sp.

Tasmanian Orchidaceae: 1810 –1999.

Progressive reference to publications – Date and Author –

- [1810] **Brown R.** *Prodromas Florae Novae Hollandaise et Insulae Van Diemen* (FLORA OF AUSTRALIA INCLUDING TASMANIA) - details unavailable
- [1859] **Hooker J.D.** *FLORA TASMANIA* - details unavailable.
- [1903] **Roadway L.** *THE TASMANIAN FLORA* describes -30 Genera + 79 spp.
- [1965] **Firth M. J.** *NATIVE ORCHIDS OF TASMANIA* - 23 Genera + 130 spp.
- [1979] **Curtis W. M.** *THE STUDENTS FLORA Part* 4a, - 24 Genera +145 spp.
- [1988] **Jones David L.** *NATIVE ORCHIDS OF AUSTRALIA* –. all Aust. states with reference to Tas. spp.
- [1995] **Buchanan. A.** Census of *TASMANIAN VASCULAR PLANTS*, - 28 Genera +147 spp.
- [1996] **Nicholls, W. H.** *ORCHIDS OF AUSTRALIA* - 476 Colour plates of over 400 Australian species, ref. Tasmania
- [1998] **Jones David. L.** *AUSTRALIAN ORCHID RESEARCH, Vol 3.* - 29 Genera. +191 spp.
- [1999] **Jones D., Wapstra H., Tonelli P. and Harris S.** *THE ORCHIDS OF TASMANIA* - 29 Genera. + 195 species.

Further reading:

Sir Joseph Dalton Hooker, Ray Desmond / Antique Collectors Club Ltd.1999 ISBN 1 85149 305 0

Jupiter Botanicus, (Robert Brown of the British Museum) D. J. Mabberley / Braunschweig Verlag Von J. Cramer. 1985. ISBN 3 7682 1408 7

John Lindley, William T. Stearn / Antique Collectors Club. 1999. ISBN 1 85149 296 8

Guide to the Flowers and Plants of Tasmania, L'ton. Field Naturalist Club / Reed Books. 1981 ISBN 0 589 50283 2

The Orchid Man, [H. M. R. Rupp] Lionel Gilbert / Kangaroo Press. 1992. ISBN 0 86417 415 2

The Voyages of Matthew Flinders, Max Colwell / Paul Hamlin Pty Ltd. 1970 ISBN 0 60035949 2

Native Orchids of Australia, Jones D. / Reed Australia [1988] ISBN 0 7301 0189 4

Phylogeny and Classification of the Orchid Family, Robert L. Dressler Cambridge University Press. 1993 ISBN 0 521 45058 6

Key words to text:

Reference glossary - The Penguin Dictionary of Botany ISBN 0 14051.126 1

- **TAXONOMY:** The study of the principals of classification - TAXONOMIST
- **TYPE:** The single (herbarium) specimen on which the description associated with the original publication of a name (nomenclature) was based; the TYPE of a taxon can be **Holotype, Lectotype** or **Neotype.**
- **HOLOTYPE:** The sole specimen used by an author as the nomenclatural TYPE of a species when the description is first published.
- **LECTOTYPE:** A specimen selected from the original material on which the name was based, a lectotype is only necessary when the original author failed to designate a Holotype.
- **NEOTYPE:** A plant specimen chosen to act as a standard taxonomic reference point following the irretrievable loss of all type material. The neotype should match the original description as closely as possible and ideally should come from the same locality as the original TYPE material.
- **ISOTYPE** – A specimen collected at the same time and from the same plant or localised population of plants as the HOLOTYPE. These duplicate specimens are often separated and deposited in several reference institutions or Herbariums.

(This article was written prior to the recent nomenclature changes to some of the orchids mentioned. The Editor has left the orchid names to keep in context with the names given to these orchids by the earlier authors.)

Robert Brown C. 1850 F.L.S., F.R.S..

Dr. W.M. Curtis A.M., MSc., DSc., F.L.S., PhD.

Nomenclatural Notes Arising from Studies in the Tribe Diurideae (Orchidaceae): *Calonemorchis*

a204518

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Abstract

Calonemorchis D.L.Szlachetko is acknowledged as a substitute name for *Calonema* (Lindl.) D.L.Szlachetko, which is a later homonym of *Calonema* Morgan. A complete list of species of *Calonemorchis* is provided, including synonyms and new combinations. A revised artificial key to the genera in the Caladeniinae is also included.

Introduction

Recently *Caladenia* R.Br. has been the subject of considerable change with the segregation of several genera, including *Calonema*, which contains those spider orchids such as *C. filamentosa* R.Br., with filiform spidery segments adorned with elongated glands. Unfortunately the name *Calonema* is illegal due to prior use for another genus. This paper, which follows on from our earlier papers on the Caladeniinae (Jones *et al* 2001, Jones *et al* 2002) and the associated studies of the same group by Hopper and Brown (2000, 2001), recognises the status of the recently described *Calonemorchis* (Szlachetko 2001b) as a new substitute name for *Calonema* (Szlachetko 2001a). We had hoped that our paper on the Caladeniinae (Jones *et al* 2001) would provide the basis for nomenclatural stability as well as a clear understanding of the phylogeny of the group, but, unfortunately we overlooked the prior use of the name *Calonema* Morgan. Szlachetko (2001b), renamed the genus *Calonemorchis,* without reinterpreting his circumscription of the group, and designating *Caladenia filifera* as the type of the genus. This paper aims to clarify the nomenclature of *Calonemorchis,* with necessary new transfers to the genus. A key to the genera of the Caladeniinae is also presented.

TAXONOMY

SUBTRIBE: Caladeniinae Pfitzer

Calonemorchis ***D.L.Szlachetko,*** **Polish Bot. J.** ***46(2): 137 (2001).***

Basionym: *Caladenia* R.Br. sect. *Calonema* Lindl. in *Edwards's Bot. Reg.* 1-23: *Swan Riv. Append.* lii (1840). Type species: *Caladenia filifera* Lindl.

Calonema (Lindl.) D.L.Szlachetko, *Polish Bot. J.* 46(1): 15 (2001), *nom. illeg.* Type species not indicated.

Jonesiopsis D.L.Szlachetko, *Polish Bot. J.* 46(1): 14 (2001), *nom. illeg.* Type species: *Jonesyella multiclavia* (Rchb.f.) D.L.Szlachetko (*Caladenia multiclavia* Rchb.f.). Note: The name *Jonesiopsis* is illegitimate because it was published simultaneously with *Jonesyella* for the same taxon.

Jonesyella D.L.Szlachetko, *Polish Bot. J.* 46(1): 14 (2001), *nom. illeg.* Type species: *Jonesyella multiclavia* (Rchb.f.) D.L.Szlachetko (*Caladenia multiclavia* Rchb.f.). Note: Published simultaneously with *Jonesiopsis,* but without a description.

Phlebochilus (Lindl.) D.L.Szlachetko, *Polish Bot. J.* 46(1): 14 (2001), *pro parte, nom. illeg.* Note: The name was published without Szlachetko designating or referring to a type.

Calonema (Lindl.) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 400-401 (2001), *nom. illeg., non* (Morgan 1893). Type species: *Caladenia filifera* Lindl., *fide* Jones (2001), *nec* Hopper *et* A.P.Br. (2001).

Species, Synonyms and New combinations:

Calonemorchis abbreviata (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia abbreviata* Hopper et A.P.Br., *Nuytsia,* 14: 187-189, f. 40, 41A (2001).

Caladenia abbreviata Hopper et A.P.Br. in N.Hoffman et A.P.Brown, Orchids South-West Austral. (ed. 2), 27, t. (1992), *nom. inval.*

Calonema abbreviatum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis bicalliata (R.S.Rogers) D.L.Szlachetko, *Polish Bot. J.* 46(2); 138 (2001).

Caladenia bicalliata R.S.Rogers, *Trans. & Proc. Roy. Soc. South Australia* 33: 17 (1909). et

Calonema bicalliatum (R.S.Rogers) D.L.Jones M.A.Clem., *Orchadian* 13(9): 401 (2001), *nom. illeg.*

Calonemorchis brevisura (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia brevisura* Hopper et A.P.Br., *Nuytsia* 14(1/2): 192-196, f. 43, 41C (24 Sept. 2001).

Caladenia brevisura Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 135, t. (1992), *nom. inval.*; *Calonema brevisurum* (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis caesarea (Domin) D.L.Szlachetko, *Polish Bot. J.* 46(2); 138 (2001).

Caladenia filamentosa R. Br. var. *caesarea* Domin, *J. Proc. Linn. Soc., Bot.* 41: 251 (1912); *Caladenia caesarea* (Domin) M.A.Clem. et Hopper, *Austral. Orch. Res.* 1: 21 (1989);

Calonema caesareum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 401 (2001), *nom. illeg.*

Calonemorchis caesarea (Domin) D.L.Jones et M.A.Clem. subsp. ***maritima*** (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia caesarea* (Domin) M.A.Clem. et Hopper subsp. *maritima* Hopper et A.P.Br., *Nuytsia* 14(1/2): 201-203, f. 44L-Q, 45A (24 Sept. 2001).

Caladenia caesarea (Domin) M.A.Clem. et Hopper subsp. *maritima* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 58, t. (1992), *nom. inval.*

Calonema caesareum (Domin) D.L.Jones et M.A.Clem. subsp. *maritima* (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis caesarea (Domin) D.L.Jones et M.A.Clem. subsp. ***transiens*** (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia caesarea* (Domin) M.A.Clem. et Hopper subsp. *transiens* Hopper et A.P.Br., *Nuytsia* 14(1/2): 203, f. 44R-V, 45A (24 Sept. 2001).

Caladenia caesarea (Domin) M.A.Clem. et Hopper subsp. *transiens* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 57, t. (1992), *nom. inval.*

Calonema caesareum (Domin) D.L.Jones et M.A.Clem. subsp. *transiens* (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis cairnsiana (F.Muell.) D.L.Jones et M.A.Clem., ***comb. nov***. Basionym: *Caladenia cairnsiana* F.Muell., *Fragm.* 7: 31 (1869).

Calonema cairnsianum (F.Muell.) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 401 (2001), *nom. illeg.*

Calonemorchis capillata (D.L.Jones) D.L.Jones et M.A.Clem., ***comb. nov***. Basionym: *Caladenia capillata* D.L.Jones, *Orchadian* 13(6): 255-256 (2000).

Calonema capillatum (D.L.Jones) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 401 (2001), *nom. illeg.*

Calonemorchis chapmanii (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia chapmanii* Hopper et A.P.Br., *Nuytsia* 14(1/2): 206-207, f. 46E-K, 45C (24 Sept. 2001).

Caladenia chapmanii Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 42, t. (1992), *nom. inval.*

Calonema chapmanii (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis cleistogama (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb.et stat. nov.*** Basionym: *Caladenia bicalliata* R.S.Rogers subsp *cleistogama* Hopper et A.P.Br., *Nuytsia* 14(1/2): 192, f. 42A-G, 43B (24 Sept. 2001).

Caladenia bicalliata R.S.Rogers subsp. *cleistogama* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 416, t. (1998), *nom. inval.*

Calonema cleistogamum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis cristata (R.S.Rogers) D.L.Jones et M.A.Clem., ***comb. nov***. Basionym: *Caladenia cristata* R.S.Rogers, *Trans. & Proc. Roy. Soc. South Australia* 47: 337 (1923).

Calonema cristatum (R.S.Rogers) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis denticulata (Lindl.) D.L.Szlachetko, *Polish Bot. J.* 46(2): 139 (2001).

Caladenia denticulata Lindl. in *Edwards's, Bot. Reg.* 1-23: *Swan Riv. Append.* L11 (1840); *Calonema denticulatum* (Lindl.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis dimidia (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia dimidia* Hopper et A.P.Br., *Nuytsia* 14(1/2): 213-215, f. 48, 47B (24 Sept. 2001).

Caladenia dimidia Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 50, t. (1992), *nom. inval.*

Calonema dimidium (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis dorrienii (Domin) D.L.Szlachetko, *Polish Bot. J.* 46(2): 139 (2001).

Caladenia dorrienii Domin, *J. Proc. Linn. Soc., Bot.* 41: 251, t. 12, f. 23 (1912); *Calonema dorrienii* (Domin) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 401 (2001), *nom. illeg.*

Calonemorchis doutchiae (O.Sarg.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia doutchiae* O.Sarg., *J. Bot.* 59: 175 (1921).

Calonema doutchiae (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis dundasiae (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia dundasiae* Hopper et A.P.Br., *Nuytsia* 14(1/2): 219-221, f. 50, 51A (24 Sept. 2001).

Caladenia dundasiae Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 417, t. (1998), *nom. inval.*

Calonema dundasiae (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis elegans (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia elegans* Hopper et A.P.Br., *Nuytsia* 14(1/2): 221-2224, f. 52, 51B (24 Sept. 2001).

Caladenia elegans Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 53, t. (1992), *nom. inval.*

Calonema elegans (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis erythrochila (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia erythrochila* Hopper et A.P.Br., *Nuytsia* 14(1/2): 224-225, f. 51C (24 Sept. 2001).

Caladenia erythrochila Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 418, t. (1998), *nom. inval.*

Calonema erythrochilum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis evanescens (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia evanescens* Hopper et A.P.Br., *Nuytsia* 14(1/2): 225-226, f. 49M-R, 51D (24 Sept. 2001).

Caladenia evanescens Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 26, t. (1992), *nom. inval.*

Calonema evanescens (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 454 (2002), *nom. illeg.*

Calonemorchis exilis (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. et stat. nov.*** Basionym: *Caladenia exilis* Hopper et A.P.Br. subsp. *exilis* Hopper et A.P.Br., *Nuytsia* 14(1/2): 226-229, f. 49S-W, 53A (24 Sept. 2001).

Caladenia varians Hopper et A.P.Br. subsp. *exilis* Hopper et A.P. Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 32, t. (1992), *nom. inval.*

Caladenia exilis Hopper et A.P.Br. subsp. *exilis*, Hopper et A.P.Br. in Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 32, t. (1998), *nom. inval.*

Calonema exilis (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis exilis (Hopper et A.P.Br.) D.L.Jones et M.A.Clem. subsp. ***vanleeuwenii*** (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia exilis* Hopper et A.P.Br. subsp. *vanleeuwenii* Hopper et A.P.Br., *Nuytsia* 14(1/2): 229-231, f. 54, 53A (24 Sept. 2001).

Caladenia varians Hopper et A.P.Br. subsp. *vanleeuwenii* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 41, t. (1992), *nom. inval.*

Caladenia exilis Hopper et A.P.Br. subsp. *vanleeuwenii* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 41, t. (1998), *nom. inval.*

Calonema exilis (Hopper et A.P.Br.) D.L.Jones et M.A.Clem. subsp. *vanleeuwenii* (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis filamentosa (R.Br.) D.L.Szlachetko, *Polish Bot. J.* 46(2): 139 (2001).

Caladenia filamentosa R.Br., *Prod.* 324 (1810); *Calonema filamentosum* (R.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 401 (2001), *nom. illeg.*

Calonemorchis filifera (Lindl.) D.L.Szlachetko, *Polish Bot. J.* 46(2): 139 (2001).

Caladenia filifera Lindl. in Edwards's, Bot. Reg. 1-23: Swan Riv. Append. lii (1840); *Calonema filiferum* (Lindl.) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 401 (2001), *nom. illeg.*

Calonemorchis flaccida (D.L.Jones) D.L.Szlachetko, *Polish Bot. J.* 46(2): 140 (2001).

Caladenia flaccida D.L.Jones, *Austral. Orch. Res.* 2: 24-25, f.27 (1991); *Caladenia flaccida* D.L.Jones subsp. *flaccida* Hopper et A.P. Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 48, t. (1992), *nom. inval.*; *Calonema flaccidum* (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 401 (2001), *nom. illeg.*

Calonemorchis footeana (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia footeana* Hopper et A.P.Br., *Nuytsia* 14(1/2): 233-234, f. 56A-H, 53C (24 Sept. 2001).

Caladenia footeana Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 45, t. (1992), *nom. inval.*

Calonema footeanum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis fuscolutescens (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia fuscolutescens* Hopper et A.P.Br., *Nuytsia* 14(1/2): 234, 236-237, f. 56I-M, 53D (24 Sept. 2001).

Caladenia varians Hopper et A.P.Br. subsp. *fuscolutescens* Hopper et A.P. Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 38, t. (1992), *nom. inval.*

Caladenia fuscolutescens Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 38, t. (1998), *nom. inval.*

Calonema fuscolutescens (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis hiemalis (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia hiemalis* Hopper et A.P.Br., *Nuytsia* 14(1/2): 237-239, f. 56N-S, 57A (24 Sept. 2001).

Caladenia varians Hopper et A.P.Br. subsp. *hiemalis* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 31, t. (1992), *nom. inval.*

Caladenia hiemalis Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 31, t. (1998), *nom. inval.*

Calonema hiemalis (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis horistes (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia horistes* Hopper et A.P.Br., *Nuytsia* 14(1/2): 239-241, f. 56T-Y, 57B (24 Sept. 2001).

Caladenia varians Hopper et A.P.Br. subsp. *horistes* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 37, t. (1992), *nom. inval.*

Caladenia horistes Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 37, t. (1998), *nom. inval.*

Calonema horistes (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis incensa (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia incensa* Hopper et A.P.Br., *Nuytsia* 14(1/2): 241-243, f. 58, 57C (24 Sept. 2001).

Caladenia incensa Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 51, t. (1992), *nom. inval.*

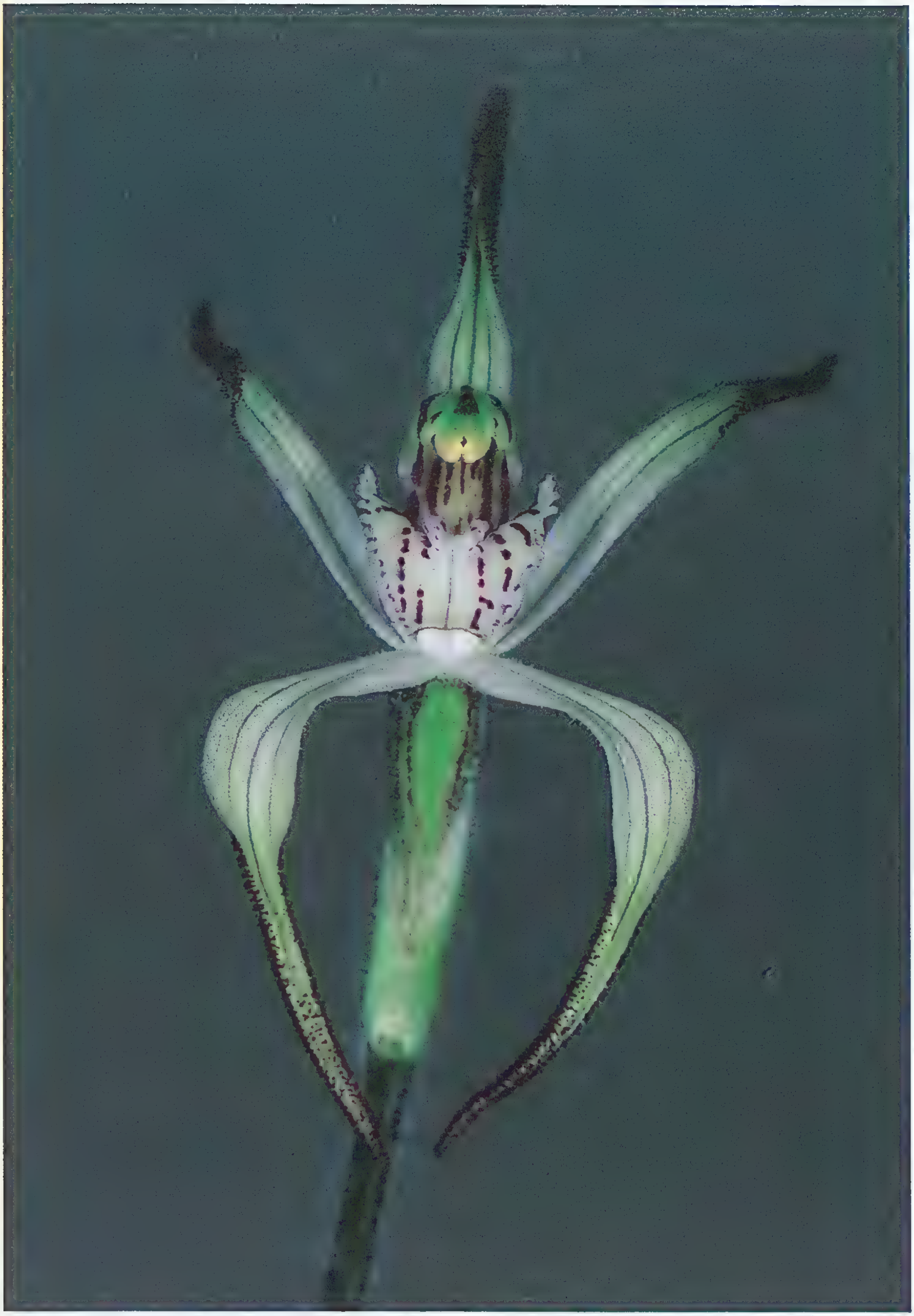
Calonema incensum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis incrassata (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia incrassata* Hopper et A.P.Br., *Nuytsia* 14(1/2): 243-246, f. 59A-G, 57D (24 Sept. 2001).

Caladenia incrassata Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 134, t. (1992), *nom. inval.*

Calonema incrassatum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis luteola (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia luteola* Hopper et



Calonemorchis bicalliata Cape de Cordeaux, Kangaroo Is. S.A. Photo MA Clements. ©

A.P.Br., *Nuytsia* 14(1/2): 246-248, f. 59H, 60A (24 Sept. 2001).

Caladenia caesarea (Domin) M.A.Clem. et Hopper subsp. *subdita* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 56, t. (1992), *nom. inval.*

Caladenia luteola Hopper et A.P. Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 56, t. (1998), *nom. inval.*

Calonema luteolum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis melanema (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia melanema* Hopper et A.P.Br., *Nuytsia* 14(1/2): 248-249, f. 59I-O, 60B (24 Sept. 2001).

Caladenia melanema Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 28, t. (1992), *nom. inval.*

Calonema melanemum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis meridionalis (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia meridionalis* Hopper et A.P.Br., *Nuytsia* 14(1/2): 249-250, f. 59P-U, 60C (24 Sept. 2001).

Caladenia varians Hopper et A.P.Br. subsp. *meridionalis* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 39, t. (1992), *nom. inval.*

Caladenia meridionalis Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 39, t. (1998), *nom. inval.*

Calonema meridionalis (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis microchila (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia microchila* Hopper et A.P.Br., *Nuytsia* 14(1/2): 250-253, f. 61A-F, 60D (24 Sept. 2001).

Caladenia microchila Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 49, t. (1992), *nom. inval.*

Calonema microchilum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis multiclavia (Rchb.f.) D.L.Jones et M.A.Clem., ***comb. nov***. Basionym: *Caladenia multiclavia* Rchb.f., *Beitr. Syst. Pflanzenk.* 64 (1871).

Calonema multiclavium (Rchb.f.) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 401 (2001), *nom. illeg.*

Calonemorchis nobilis (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia nobilis* Hopper et A.P.Br., *Nuytsia* 14(1/2): 253-256, f. 61G-M, 62A (24 Sept. 2001).

Caladenia varians Hopper et A.P. Br. subsp. *nobilis* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 35, t. (1992), *nom. inval.*

Caladenia nobilis Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 35, t. (1998), *nom. inval.*

Calonema nobilis (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis occidentalis (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia occidentalis* Hopper et A.P.Br., *Nuytsia* 14(1/2): 256-257, f. 62B (24 Sept. 2001).

Caladenia variegata Hopper et A.P. Br. in N.Hoffman & A.P.Br., Orchids South-West Austral. (ed. 2), 44, t. (1992), *nom. inval. et illeg., non* Colenso (1885).

Caladenia occidentalis Hopper et A.P. Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 44, t. (1998), *nom. inval.*

Calonema occidentalis (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis pachychila (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia pachychila* Hopper et A.P.Br., *Nuytsia* 14(1/2): 1257-259, f. 61N-R, 62C (24 Sept. 2001).

Caladenia pachychila Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 131, t. (1992), *nom. inval.*

Calonema pachychilum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis paradoxa (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia paradoxa* Hopper et A.P.Br., *Nuytsia* 14(1/2): 259-260, f. 62D (24 Sept. 2001).

Calonema paradoxum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis pendens (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia pendens* Hopper et A.P.Br., *Nuytsia* 14(1/2): 261-262, f. 57S-V, 63A (24 Sept. 2001).

Caladenia varians Hopper et A.P.Br. subsp. *pendens* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 34, t. (1992), *nom. inval.*

Caladenia pendens Hopper et A.P.Br. subsp. *pendens* in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 34, t. (1998), *nom. inval.*

Calonema pendens (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis pendens (Hopper et A.P.Br.) D.L.Jones et M.A.Clem. subsp. ***talbotii*** (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia pendens* Hopper et A.P.Br. subsp. *talbotii* Hopper et A.P.Br., *Nuytsia* 14(1/2): 264, f. 64A-K, 63A (24 Sept. 2001).

Caladenia varians Hopper et A.P.Br. subsp. *talbotii* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 40, t. (1992), *nom. inval.*

Caladenia pendens Hopper et A.P.Br. subsp. *talbotii* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 40, t. (1998), *nom. inval.*

Calonema pendens (Hopper et A.P.Br.) D.L.Jones et M.A.Clem. subsp. *talbotii* (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 455 (2002), *nom. illeg.*

Calonemorchis polychroma (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia polychroma* Hopper et A.P.Br., *Nuytsia* 14(1/2): 264-268, f. 65A-F, 63B (24 Sept. 2001).

Caladenia polychroma Hopper et A.P. Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 43, t. (1992), *nom. inval.*

Calonema polychromum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 456 (2002), *nom. illeg.*

Calonemorchis postea (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia postea* Hopper et A.P.Br., *Nuytsia* 14(1/2): 268-269, f. 66, 63C (24 Sept. 2001).

Caladenia varians Hopper et A.P.Br. subsp. *postea* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 30, t. (1992), *nom. inval.*

Caladenia postea Hopper et A.P.Br. in N.Hoffman & A.P.Br., Orchids South-West Austral. (rev. ed. 2 & suppl.), 30, t. (1998), *nom. inval.*

Calonema posteum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 456 (2002), *nom. illeg.*

Calonemorchis pulchra (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia pulchra* Hopper et A.P.Br., *Nuytsia* 14(1/2): 269-273, f. 67, 63D (24 Sept. 2001).

Caladenia pulchra Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 47, t. (1998), *nom. inval.*

Caladenia flaccida D.L.Jones subsp. *pulchra* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 47, t. (1992), *nom. inval.*

Calonema pulchrum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 456 (2002), *nom. illeg.*

Calonemorchis radialis (R.S.Rogers) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia radialis* R.S.Rogers, *Trans. & Proc. Roy. Soc. South Australia* 51: 296 (1927).

Calonema radialis (R.S.Rogers) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 403 (2001), *nom. illeg.*

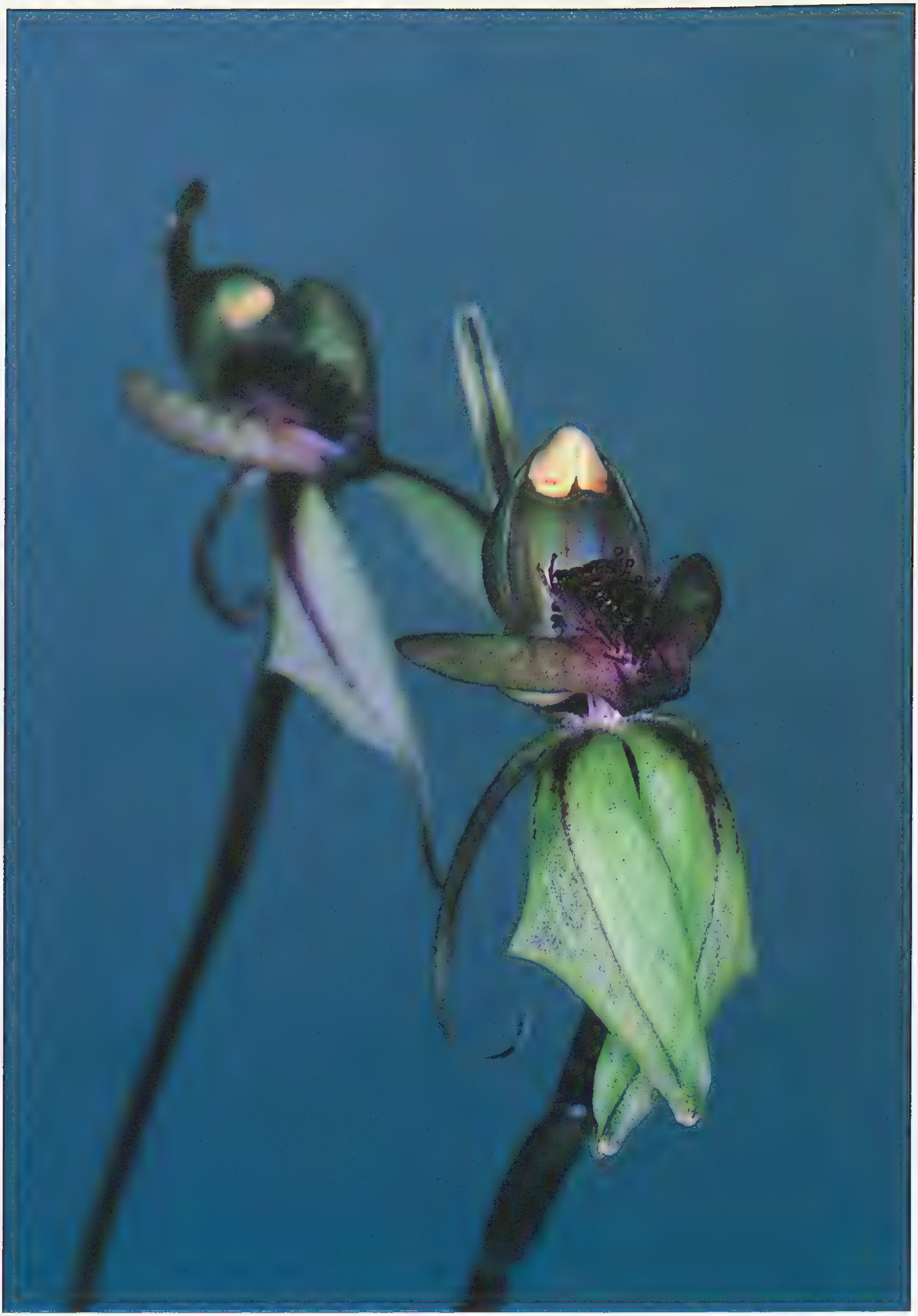
Calonemorchis remota (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia remota* Hopper et A.P.Br. subsp. *remota*, *Nuytsia* 14(1/2): 273-274, f. 68, 69A (24 Sept. 2001).

Caladenia varians Hopper et A.P.Br. subsp. *remota* Hopper et A.P.Br., in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 36, t. (1992), *nom. inval.*

Caladenia remota Hopper et A.P.Br. subsp. *remota*, in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 36, t. (1998), *nom. inval.*

Calonema remotum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 456 (2002), *nom. illeg.*

Calonemorchis remota (Hopper et A.P.Br.) D.L.Jones et M.A.Clem. subsp. ***parva*** (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia remota* Hopper et A.P.Br. subsp. *parva* Hopper et A.P.Br., *Nuytsia* 14(1/2): 274-277, f. 69A (24 Sept. 2001).



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Caladenia remota Hopper et A.P.Br. subsp. *parva* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 424, t. (1998), *nom. inval.*

Calonema remotum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem. subsp. *parvum* (Hopper et A.P.Br.) D.L.Jones et M.A.Clem, *Orchadian* 13(10): 456 (2002), *nom. illeg.*

Calonemorchis roei (Benth.) D.L.Jones et M.A.Clem., ***comb. nov***. Basionym: *Caladenia roei* Benth., *Fl. Austral.* 6: 383 (1873).

Calonema roei (Benth.) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 403 (2001), *nom. illeg.*

Calonemorchis sanguinea (D.L.Jones) D.L.Jones et M.A.Clem., ***comb. nov***. Basionym: *Caladenia sanguinea* D.L.Jones, *Orchadian* 13(1): 17-21, f.7, t. (1999).

Calonema sanguineum (D.L.Jones) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 403 (2001), *nom. illeg.*

Calonemorchis sigmoidea (R.S.Rogers) D.L.Szlachetko, *Polish Bot. J.* 46(2); 142 (2001).

Caladenia sigmoidea R.S.Rogers, *Trans. & Proc. Roy. Soc. South* Australia 62: 12 (1938); *Calonema sigmoideum* (R.S.Rogers) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 403 (2001), *nom. illeg.*

Calonemorchis ultima (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia ultima* Hopper et A.P.Br., *Nuytsia* 14(1/2): 277-279, f. 70, 69B (24 Sept. 2001).

Caladenia ultima Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 52, t. (1992), *nom. inval.*

Calonema ultimum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 456 (2002), *nom. illeg.*

Calonemorchis voigtii (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia voigtii* Hopper et A.P.Br., *Nuytsia* 14(1/2): 279-280, f. 65G-L, 69C (24 Sept. 2001).

Caladenia voigtii Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 133, t. (1992), *nom. inval.*

Calonema voigtii (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 456 (2002), *nom. illeg.*

Calonemorchis vulgata (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia vulgata* Hopper et A.P.Br., *Nuytsia* 14(1/2): 280-282, f. 65M-S, 69D (24 Sept. 2001).

Caladenia varians Hopper et A.P.Br. subsp. *varians* Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 33, t. (1992), *nom. inval.*

Caladenia vulgata Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (rev. ed. 2 & suppl.), 33, t. (1998), *nom. inval.*

Calonema vulgatum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 456 (2002), *nom. illeg.*

Calonemorchis wanosa (A.S.George) D.L.Jones et M.A.Clem., ***comb. nov***. Basionym: *Caladenia wanosa* A.S.George, *Nuytsia* 5(1): 57-8, t. 3, A-E (1984).

Calonema wanosa (A.S.George) D.L.Jones et M.A.Clem., *Orchadian* 13(9): 403 (2001), *nom. illeg.*

Calonemorchis xantha (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., ***comb. nov.*** Basionym: *Caladenia xantha* Hopper et A.P.Br., *Nuytsia* 14(1/2): 282-283, f. 65T-W, 71A (24 Sept. 2001).

Caladenia xantha Hopper et A.P.Br. in N.Hoffman & A.P.Brown, Orchids South-West Austral. (ed. 2), 55, t. (1992), *nom. inval.*

Calonema xanthum (Hopper et A.P.Br.) D.L.Jones et M.A.Clem., *Orchadian* 13(10): 456 (2002), *nom. illeg.*

Artificial key to the genera of the *Caladeniinae*

1 Leaf absent from flowering plants, reduced to a thin, scale-like basal bract; leaves on sterile plants ovate, with prominent white veins ... ...***Praecoxanthus***

1. Leaves similar on both flowering plants and sterile plants, lacking white veins **2**

2 Leaf glabrous or nearly so; leaves of sterile plants with a small, basal, ligule-like growth; petals linear-clavate, densely covered with sessile red glands; labellum sessile ... ...***Leptoceras***

2. Leaf densely hairy; leaves of sterile plants without a basal, ligule-like growth; petals never linear- clavate; labellum clawed or sessile **3**

3 Labellum strongly insectiform; lamina attached by a membranous portion to a rigid, rod-like, pseudo column foot; labellum calli greatly enlarged and irregularly swollen; column wings enlarged medially ...***Drakonorchis***

3. Labellum not insectiform; lamina sessile on the column base or with a basal claw; calli neither greatly enlarged nor irregularly swollen; column wings enlarged distally **4**

4 Calli restricted to labellum base **5**
4. Calli extending at least to the labellum mid-lobe **6**

5 Flowers glossy; labellum lamina much reduced, thin to membranous, glabrous; column wings hooded above the anther ... ...***Elythranthera***
5. Flowers dull; labellum lamina well developed, the lateral lobes fleshy, papillate; column wings not extending above the anther ... ...***Glossodia***

6. Tubers wholly enclosed in a multilayered fibrous tunic; flowers usually blue **7**
6 Tubers partly enclosed in a multilayered fibrous tunic; flowers never blue **8**

7 Leaf ovate; flowers opening fully only in warm weather; trichomes terete, eglandular, papillate; labellum calli monomorphic ... ...***Cyanicula***
7. Leaf linear to lanceolate; flowers unreactive to weather conditions; trichomes flattened, eglandular, non-papillate; labellum calli dimorphic ... ...***Pheladenia***

8 Plants growing in spreading clonal colonies; labellum calli clustered, linear, without an expanded head, the bases fused to form a plate-like structure; column wings with a short, free lobule ... ...***Caladenia***
8. Plants growing singly or in loose groups or tufts, never in spreading clonal colonies; labellum calli in rows, with an expanded head, the bases free; column wings entire **9**

9 Flowers usually large and spider-like; tepals usually attenuate, caudate, filiform or clavate distally; trichomes mostly eglandular, with a long, white basal cell **10**
9. Flowers usually small and hand-like; tepals usually obtuse to acute; trichomes mostly glandular, with a short dark basal cell **11**

10 Column base with two prominent yellow gland-like structures ... ...***Arachnorchis***
10. Column base without prominent yellow gland-like structures ... ...***Calonemorchis***

11 Dorsal sepal strongly inarched over the column; labellum calli usually in four or more rows ... ...***Stegostyla***
11. Dorsal sepal erect or recurved, occasionally incurved but never strongly so; labellum calli usually in two rows **12**

12. Labellum cream, white or pink, either lacking bands or with narrow dark red bands ... ...***Petalochilus***
12 Labellum whitish or blue, with numerous narrow dark blue bands **13**

13 Flowers usually blue ... ...***Cyanicula***
13. Flowers white ... ...***Glycorchis***

Acknowledgement

We thank Judith Curnow for alerting us to the prior use of the name *Calonema*.

References

Hopper, S.D. & Brown, A.P. (2000). New genera, subgenera, combinations and species in the Caladenia alliance (Orchidaceae: Diurideae). *Lindleyana* 15: 120-126.
Hopper, S.D. & Brown, A.P. (2001). Contributions to Western Australian Orchidology: 2. New taxa and circumscriptions in Caladenia. *Nuytsia* 14(1/2) 27-314.
Jones, D.L., Clements, M.A., Sharma, I.K. and Mackenzie, A.M. (2001). A new classification of *Caladenia* R.Br. (Orchidaceae). *Orchadian* 13(9): 389-420.
Jones, D.L., Clements, M.A., Sharma, I.K., Mackenzie, A.M. and Molloy, B.P.J. (2002). Nomenclatural notes arising from studies into the tribe Diurideae (Orchidaceae). *Orchadian* 13(10): 437-468.
Szlachetko, D.L. (2001a). Genera et Species Orchidalium. 1. *Polish Bot. J.* 46(1): 11-26.
Szlachetko, D.L. (2001b). Nomenclatural adjustments in the Thelymitroideae (Orchidaceae). *Polish Bot. J.* 46(2): 137-144.

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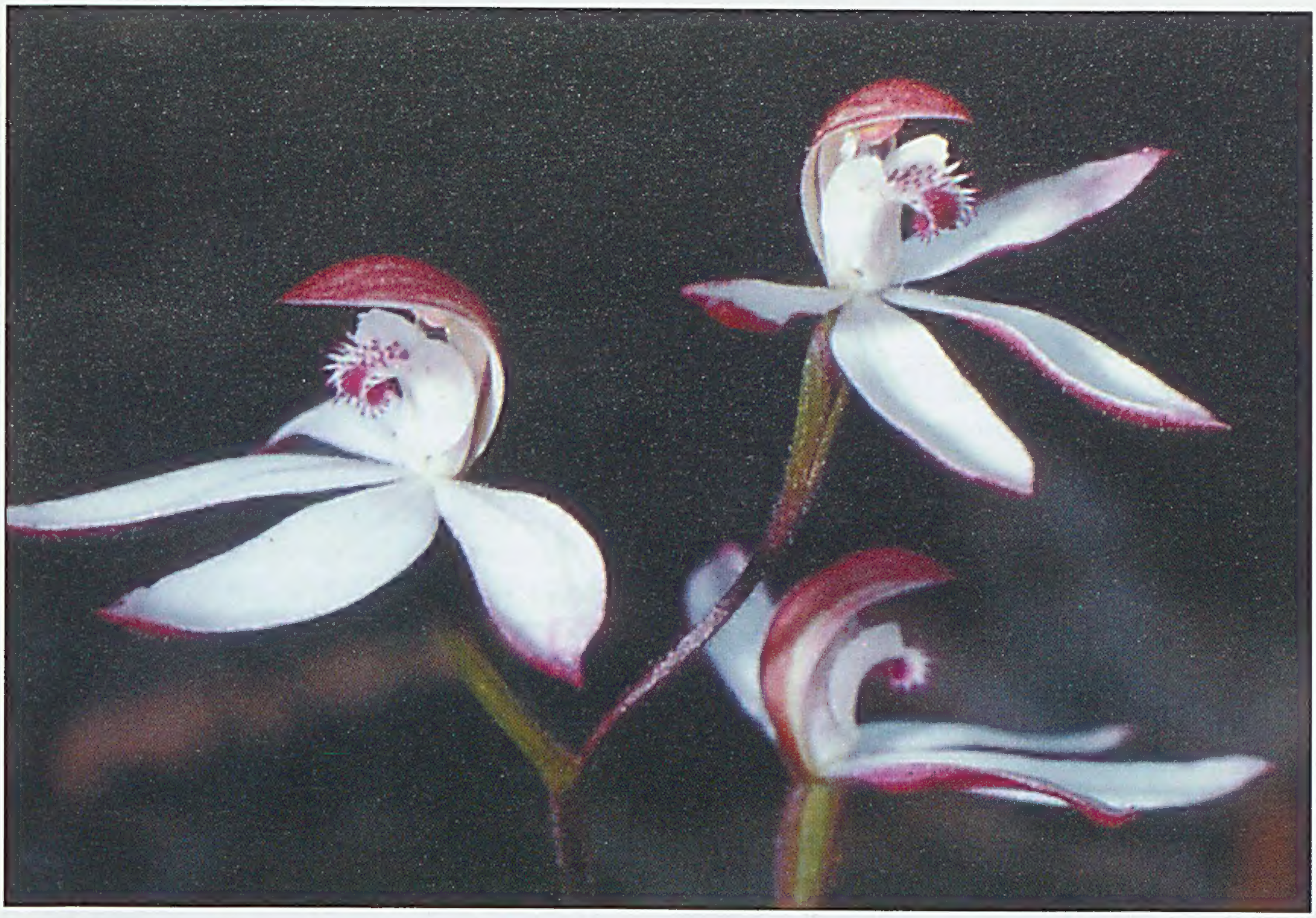

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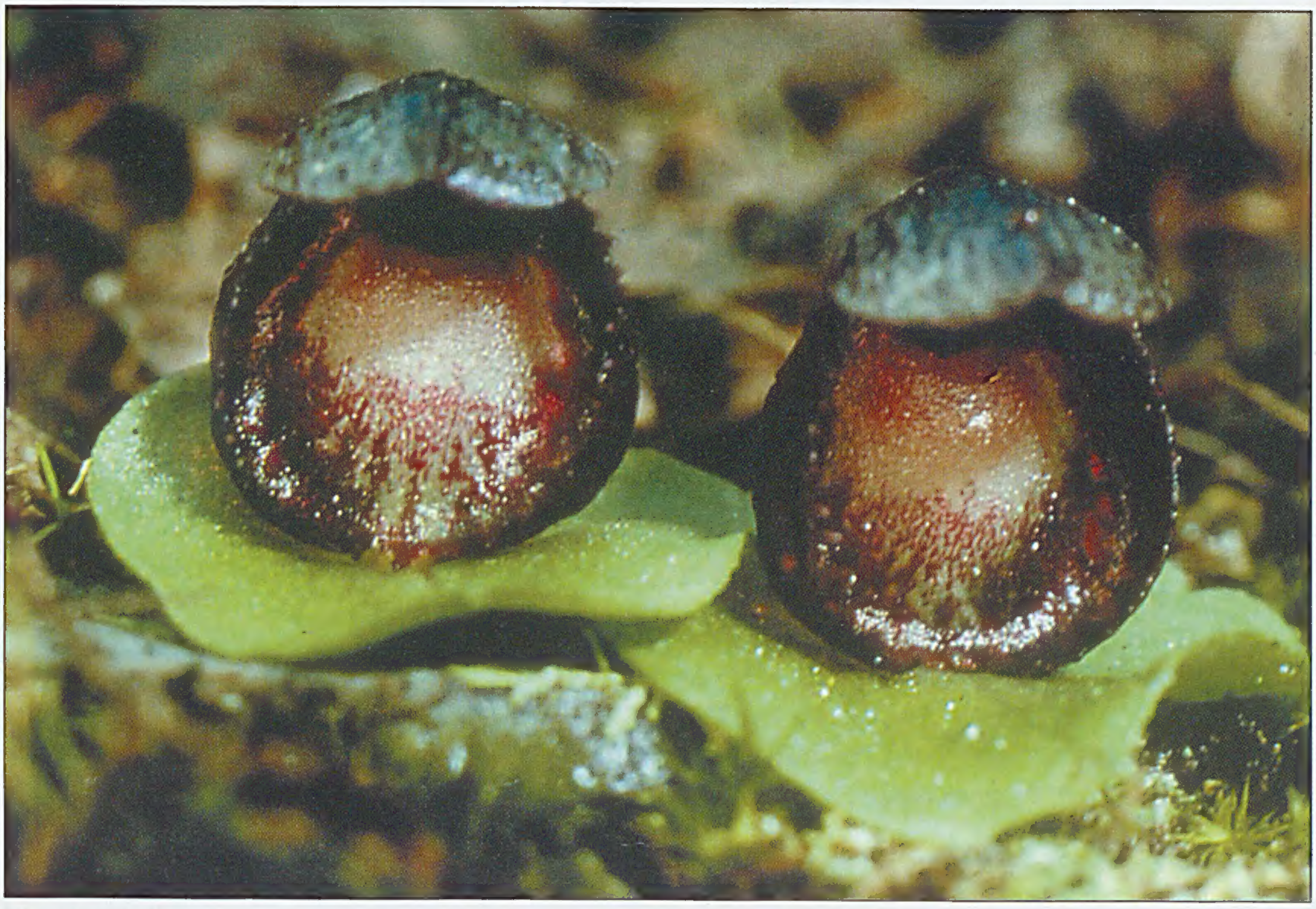

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